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OPPORTUNITIES OF THE GENERAL PRACTITIONER IN MEDICAL INVESTIGATION.

THE ANNUAL ORATION OF THE MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY, APRIL, 1921.

BY ROGER I. LEE, M.D., CAMBRIDGE, MASS.

I TRUST that it does not seem presumptuous on my part to undertake to speak to this Society on the particular topic that I have chosen. My choice of this topic is based, not on any criticism of the general practitioner, but on my affection for him. Certainly, we have had in the past, and still have at present, notable examples of the best types of general practitioners. May I recall to your minds the lives and achievements of Dr. Waterhouse and Dr. Morrill Wyman, both of Cambridge and of this district, and among those, now happily living, the names of Dr. Edmund H. Stevens of Cambridge, and Dr. Alfred Worcester of Waltham? There are, of the younger generation, conspicuous examples of general practitioners; but I must refrain from further personalities.

We may decry as we will the tendency of specialism in medicine, but after all, medicine is only participating in a very general movement that affects all activities of modern civilized life. While this tendency in medicine has very definite drawbacks, it would seem to be inevitable, and must in its general scope be accepted. It is possible, however, to make certain readjustments which would enhance the value of this tendency and at the same time minimize its defects.

One of the great defects of the tendency to specialization is, I take it, the effect on the morale of the general practitioner. It is, indeed, curious that the general practitioner is as highly regarded as ever by the substantial bulk of citizens, or, perhaps, more highly; but the general practitioner himself seems to place an improperly low value of his own standing in the medical community. To be sure, these are the days of the glorification of the laboratory worker, but it is inevitable in human progress that the pendulum should have fairly wide swings, and in the long run proper values tend to be set. Recently I have heard an eminent practitioner who would, I think, be designated by common consent as a specialist in internal medicine, apologize for the presentation of certain investigations on the ground that they were purely clinical. Such a spontaneous and probably unconscious apologetic attitude goes far towards undermining the morale of clinicians and general practitioners. It is, perhaps, a foible of human nature that valuations are very largely set by the possessor of goods, whether material or intellectual. Humility is highly regarded in the abstract as a virtue, but in practical matters it not infrequently happens that goods can be sold by marking up the prices as

well as by marking them down. It seems to me that the uncomplaining acceptance on the part of the clinicians and the general practitioners that their services are of slight value to mankind and to the medical profession, is as unfortunate as it is unjustified.

We all know that many important medical discoveries have been made by general practitioners. Our greatest discoveries in medicine were, as a rule, anticipated by the observations of general practitioners. The actual relation of bacteria in the transmission of disease was, of course, demonstrated by such master minds as Pasteur and Koch, but clinical observations have repeatedly suggested the underlying principles relating to infectious disease. We recall with pleasure that Dr. Oliver Wendell Holmes, in 1846, suggested most of the important facts that bear upon the puerperal fever. Dr. Finlay suspected the relation of the stegomyia mosquito in transmitting yellow fever, before the findings of the Reed Board permanently established this important discovery. Our conviction that tuberculous patients are cured by treatment with abundant fresh air, rest, and a generous diet, is based, not on laboratory evidence, but upon clinical evidence. As a matter of fact, laboratory methods cannot explain the beneficent effect of good hygiene on tuberculosis beyond the obvious platitude that good hygiene increases bodily resistance. Much laboratory work has been done on tuberculosis, but it must be confessed that great strides have not been made since Koch's original communication, and furthermore, that clinical data furnish us the general conceptions of the disease and its treatment. One should not, of course, minimize the importance of laboratory observations, but on the other hand, one should not minimize the importance of so-called clinical observations. The important clinical observations on tuberculosis have been the foundation of a great world-wide movement in behalf of good health and hygiene. Through a common interest in the prevention of tuberculosis, the medical profession and the laity have been closely associated, and have come to a mutual understanding, to the great benefit of both.

It is by no means proven that liberally equipped hospitals and richly endowed institutions have a monopoly on medical problems. Medical progress depends primarily upon the individual and not upon the plant. It is perfectly true that the well-equipped and well-endowed plant attracts the most progressive minds, but it is also true that many of those minds have done their most important work in obscurity and under the handicap of wretched physical surroundings. Pasteur, working in cellars and outhouses, probably accomplished more for medical science than has the elaborately appointed institute that bears his name. Medical progress, perhaps, depends mostly upon the single factor of a proper point of view, and we can largely discount the other factors, particularly the factors of physical surroundings. The advantages of a hospital or of an institution of learning are not found in the material advantages, but in the installation, often indirect and subtle, of the proper viewpoint.

One can readily discern the very great advantages possessed by the general practitioner in shaping medical progress. In the first place, most cases of illness come under the observation of general practitioners. Secondly, there are few aspects of medicine which are capable of such concentrated specialism that the patient as a whole, including his ancestry and his environment, can safely be neglected. The general practitioner is and must be interested in his patient as a whole and not in any one or several detached segments. The presence of tubercle bacilli in the sputum, as reported by a competent laboratory, can be accepted absolutely as proof of the presence of pulmonary tuberculosis. Nevertheless, it is not possible, at least at present, for the laboratory man to indicate always, from a thorough study of the sputum, the stage, the probable prognosis, or the best method of treatment of each individual case whose sputum he studies. The growth of social service in our hospitals is merely an index that the hospital specialists recognize the limitations of specialists in medicine and plan to fill up the large gap by the introduction of social service.

To be sure, the intensive study of disease by specialists with laboratory equipment has done much to advance the knowledge of certain diseases, but in some aspects at least these studies have been disappointing. The disappointment has resulted in a most vigorous protest on the part of Sir James Mackenzie, who goes so far as to say that the modern tendencies in medical study are entirely wrong. One has to recall the tremendous amount of work which has been done upon chronic nephritis,—to use a common illustration,—and the enormous and somewhat bewildering bulk of literature which has come out of that work, to appreciate the significance of Mackenzie's statements. The advanced cases of chronic nephritis have been welcomed in the hospitals, and many research workers have devoted countless hours of labor to the investigation of that condition. One versed in the literature of the subject can give thousands of references to formidable work on the blood chemistry, metabolism, etc., of chronic nephritis. Of course, all of this work is not in vain. It has resulted very markedly in a better understanding of this disease. It is often assumed, but it should not be accepted, that the findings in the late stage of a disease enable one to decide positively what are the

findings in the earlier stage. Scientific investigations would gladly include the early stages of the disease, but somehow or other, opportunities do not seem to be available. It is remotely possible that the early stages of chronic disease may be quite different from what we are led to suspect from the intensive study of the later stages. It should be remembered, too, that our tests which have been developed for the purpose of diagnosing and gauging the intensity of a late stage may not be applicable to an early stage of the disease. It is, indeed, extraordinary that while advanced cases of certain chronic diseases fairly encumber our hospitals, yet earlier stages of these diseases are relatively absent. In reality, we know actually very little concerning the essential mechanism of that common disease first accurately described by the excellent general practitioner, Bright.

Recently I had occasion to bring together for publication the available material concerning certain blood diseases. The first admirable description given by a general practitioner (Addison), of pernicious anemia, still remains, I think, the best description of the disease. Modern researches have developed refinements of diagnosis, prognosis, and treatment, but Addison described all the essential features of the disease. Even in the case of yellow fever, which stands out as a brilliant example of organized intensive attack upon a difficult problem, the successful solution of the yellow fever substantiated the clinical investigations of certain practitioners.

It is not my purpose to minimize organized medical research, and I am both enthusiastic and optimistic concerning the abundant harvests that organized medical research will continue to bring to mankind. I would, however, like to urge the importance of supplementing these organized researches by the investigations of the general practitioner. As Mackenzie has pointed out in his book, hospitals attract disease in the well-developed stages, and as a necessary corollary of that, the study in hospitals is usually directed towards advanced disease. Mackenzie contends that the proper stage of the disease for study is in the early stages, in that stage of transition between health and disease. It is at that stage that the case comes under the observation of the general practitioner. The general practitioner alone can watch the transition of a patient from complete health to incipient disease. It is also the general practitioner alone who is not handicapped by the superficial peculiarities and mannerisms of patients. The general practitioner can discriminate in the case of a person that he knows well, between real symptoms and trifling ailments. The records of most practitioners will show many cases whom he did not consider very sick, but who, to his temporary chagrin, were definitely diagnosticated by eminent specialists as seriously ill with some one of many ailments. It usually happens that in the course of time these patients return to the general practitioner and their cases return to the actual classification in which he originally placed them. I dwell a little upon this fact because it explains, not only the special position of the general practitioner in the study of disease, but also it illustrates very well the complicated and too little understood physiology of the human body. There is no human physiological process which is not capable of extensive modification under the influence of individual peculiarities. The time may come when exact laboratory methods may be able to interpret with delicate discrimination the now complicated phenomena of the field of human physiology, but at present we ought to be extremely cautious in accepting, without reservation, the results of any given test unless a considerable margin is left for the influence of human variations upon the test.

The endeavors of the general practitioner along the line of medical progress will, however, probably not be made along the exact stereotyped lines found so fruitful in research laboratories. A medical practitioner will not, himself, study the finer details of the chemistry of blood, or study metabolism. He can, however, utilize previous studies and already existing machinery on his own material and for his own purposes.

While the general practitioner may not be able to use personally all of the instruments of laboratory research, he can profitably utilize the general methods of laboratory research. A laboratory problem is simpler than a human problem, and laboratory research will furnish the general practitioner with valuable suggestions. Medical laboratory research utilizes the same general methods which have been found of advantage in all scientific investigations. There are laboratory workers who do not contribute to medical progress in spite of hard work, because they do not meet the general requirements of investigative methods. Some laboratory workers achieve results in spite of their neglect of these general methods, but these men are rare exceptions and their delinquencies are usually more superficial than real.

A sound investigator must keep some form of record of his experiments. Perhaps the general practitioner is weaker in regard to keeping records of his experiments than in any other respect. After all, the treatment of any individual case, the administration of any given drug, must be regarded as an experiment. I am not advancing the impossible theory that general practitioners should keep voluminous notes, because I have too intimate

a knowledge of the difficulty of medical practice to advance such an hypothesis. Nevertheless, some form of record-keeping is absolutely essential if the medical practitioners are to make their contributions to the progress of medicine. If one wants, one can regard perfectly legitimately general practice as a great experimental laboratory. Certainly the positive knowledge in regard to medicine is not sufficient to give grounds of complaint if such a view is taken. Selected extracts from the records of busy practitioners would be of tremendous value. It has happened that certain otherwise obscure practitioners have become famous by having made available to posterity their case records. These case records are invaluable, not only as medical history, but as history of the customs of those times.

The more ambitious practitioners will want to go further than this, and consequently will want problems to investigate. As I have suggested, there is all of medicine that can be benefited by advancement. But the laboratory worker in bacteriology does not attempt to investigate all bacteriology. He selects a particular problem in which he does intensive work and of which he keeps particularly careful records. The laboratory worker, in picking out his field for investigation, limits that field for the moment to as small dimensions as possible. In other words, he takes the smallest possible corner for his detailed investigations. He would not take for immediate investigation such a problem as treatment of pneumonia, but he might well take the treatment of a particular kind of pneumonia with one kind of drug.

In accordance with general scientific principles, the laboratory worker is duly impressed with the importance of controls. I take it that if there is any just criticism applicable to clinicians and general practitioners, it is that their publications and their private deductions are often not subject to rigid controls. It must be confessed that laboratory workers are not by any means immune to criticism. Yet the general practitioner has, as a rule, available the material for controls of all sorts.

Not everyone, and not every man who works in a laboratory, has what is known as the investigative spirit. The investigative spirit is nothing particularly mysterious or unusual. It is, primarily, a mixture of that much-maligned human attribute called curiosity, and of industry which dignifies curiosity, which without it might be gossip, to the realm of investigation. Other qualities are desirable, but not absolutely necessary. Many of our great intellects have not gone very far, but most of our men of great industry, if possessed of a modicum of intellect, have gone far. Good training might be regarded as necessary. It certainly seems necessary, looking backwards over the lives of the great investigators, but we have not such ability to forecast the effect of a particular training. Certainly one cannot minimize the beneficent effects of good, sound training, nor the deleterious effect of poor training. There are many worthy individuals whose acceptance of the established order of things is so complete and so complacent that the best training in the world would not arouse in them any enthusiasm for investigation, for, after all, investigation means the possibility of a change. There is a great number of physicians who acquire this attitude of complacent acceptance of things as they are, from their medical training. The dogmatic statements of many teachers of medicine contain not even a dark suggestion that there is anything more to be learned on a given subject. The fixed customs in certain hospitals hardly permit the thought to arise in the junior physicians and surgeons that these customs will ever be changed. It may be urged with some justice that a very skeptical point of view is, perhaps, more dangerous than a very complacent point of view. On the other hand, if science means anything it should mean that all of its data are accepted on no other grounds than they have been demonstrated and proven, as far as it is possible. When one recalls all the prodigious advantages in medicine in each decade of the last forty years, and that apparently the fundamental conception of medicine has been altered, one ventures to prophesy that similar prodigious changes will take place in the next forty years and that a medical student who graduates today, and who depends upon the information acquired in the medical school for his professional life, will find himself ridiculously out of step with the times within ten years, and an object of pity after that.

It may be urged that inasmuch as the general practitioner has to keep up with medical progress, of what use is it for him to participate in actual medical investigations? Certainly the days of the general practitioner are urgently busy. There is a deluded notion concerning medical investigation. It is generally assumed that the good to be gained from medical investigation is the direct advancement of medical science. It is given to few men to further science directly as by important discoveries. It is, however, possible for most medical men, by improving themselves, to participate in medical advancement. If general practitioners continue in the future, as in the past, to make really great discoveries, so much the better, but the main purpose of the participation of general practitioners in investigation would be served even if no discoveries are directly made.

It is necessary at this point to emerge from history and argument into the concrete sug-

gestions for the present and immediate future. The general practitioner has it within his power to make observations that will upset many widely accepted medical assertions. I have in mind my own experiences in connection with Harvard University. There is at the present time no satisfactory standard of what constitutes normal health among young men. I found, on the examination of large numbers of young men, that approximately 5 per cent. of them had albumin in their urine, without other manifestations of nephritis. I had seen, occasionally, in previous practice, symptomless cases of so-called functional albuminuria in young men and had read in the literature that such cases did occur. After several years of observation, our investigations at Harvard University showed that albuminuria in young men, without other signs or symptoms, was of no serious import. Doubtless similar observations had been made upon individual cases by countless general practitioners, but the tabulation of these cases had not been made in any very satisfactory way, although it was my experience that general practitioners were very much less alarmed by the occurrence of albumen than were the specialists in internal medicine. From his vantage ground the general practitioner had frequently observed the symptom of albumen, and had arrived at a correct interpretation of that particular finding. This illustration could be multiplied, showing the opportunity for the general practitioner to make real contributions to our knowledge of what constitutes a normal standard of health.

Not very long ago I was present at an international conference. The conference resolved itself into special committees. Frequently in the committees, made up ostensibly of scientific experts along special lines, certain points were mightily discussed by erudite individuals. To my somewhat abrupt remark that every general practitioner had the solution of a particular problem, the query was raised as to the place of publication. It subsequently developed that this information was not obtainable either in medical schools or in textbooks. Far be it from me to urge additional publications on the subject of sex, but the outstanding fact remains that the general practitioner has a mass of first-hand facts of sex,—some tragic, some comic, but mostly dull and commonplace,—and that he, if he would, could discuss from an adequate perspective, Havelock Ellis and Freud, and their followers and adherents, in a fashion that, I expect, would be homely, emphatic and refreshing.

But it is not merely along the lines of what might be called establishing standards that it seems to me lie the opportunities for investigation on the part of the general practitioner. Great opportunities, as I have indicated previously in this paper, lie in the study of early disease, and especially early chronic disease. At the present time, the general practitioner has available for him a really remarkable assortment of technical machinery in the way of diagnostic and prognostic laboratory machinery. The city and state laboratories will do for the general practitioner, without cost, all the essential laboratory investigations, such as bacteriological examination of the sputum, Wassermann test, etc., etc. The consultation clinic idea, such as at the Massachusetts General Hospital, is designed to furnish to the general practitioner the laboratory and special facilities of a large hospital. I appreciate fully some of the difficulties in securing these special data in individual cases. There is always the bother of arrangements. There is always the likelihood of a certain amount of red tape, and there are frequently financial difficulties. Nevertheless, the opportunities are there, and are being developed, and the future developments depend almost exclusively upon the attitude of the general practitioners. By a concerted and progressive action, the general practitioners can probably secure any modification of these new developments that they desire. The requisite is their unified activity. I am not a special pleader for the consultation clinic at the Massachusetts General Hospital or at any other hospital, but I am a pleader for making available to the general practitioner the complicated technical methods which have been found valuable in the practice of medicine. I believe that it is possible for general practitioners to secure all of the benefits of any of the diagnostic procedure now utilized in medical laboratories for himself and for his patients. I believe that it is possible for him to undertake research in a group of his own patients just as a visiting physician in a hospital can undertake a research on a group of hospital patients. But at the present time, the various facilities in technical laboratory methods are comparatively little utilized by the general practitioner. The point remains, however, that they are there and can be utilized, provided he so desires.

But the progress in medicine does not concern itself exclusively, or even mainly, with the limited investigation of the utility of some delicate laboratory procedure in diagnosis, prognosis, and treatment. The field is far larger than that. Our modern hospitals are tending to develop into diagnosis clinics. After the diagnosis is made, the treatment is outlined and usually expediency, partly from the financial point of view, but largely from other points of view, make it desirable that the treatment should be in the patient's home, that is to say, properly under the charge of the general practitioner. It is, of course, possible

that the hospitals which have developed the diagnostic phase of medicine so extensively may develop also the therapeutic phase, but it seems that the tendency is not that way. Outside of special therapeutic procedures, such as operations, etc., treatment will be largely in the hands of the general practitioner. Successful treatment in the case of many diseases must be applied over a considerable period of time. It is only the general practitioner with his continuous surveys, who can record the actual results and make proper deductions therefrom. It seems to me that in the line of treatment there are tremendous opportunities for investigation on the part of the general practitioner.

Let us take the single illustration of the amount of exercise which cardiac cases should take. Obviously the hospitalized cardiac case is out of the question. If the hospitalized cardiac case recovers sufficiently to go home and resume ordinary life to a greater or less extent, he comes under the charge of the practitioner, and joins an already large group of cardiac cases with which any practitioner is always familiar. These cases will be under the observation of a general practitioner for a period of many years. They offer opportunities for carefully recorded data which would be of inestimable value to the medical profession. There is, perhaps, a tendency among medical men to assume that the dictum of rest in a cardiac case has been somewhat overemphasized, but there are at the present time no sufficient data upon which to justify that assumption. The general practitioners could contribute tremendously important data upon that particular point.

I have, perhaps, given sufficient illustrations to indicate my general suggestions. I have not attempted to outline the definite shape and scope of the investigations which might be carried on by the general practitioner. Each practitioner will find readily available, ample material so that he may undertake the kind of investigation which his interest and his material indicate.

I realize fully, as I have said before, that general practitioners are busy men; that all too often every moment is devoted to urgent matters which cannot be postponed, but I have not attempted to make out of the general practitioner a laboratory worker, but have tried to indicate to him how he can utilize the already existing opportunities and how he can assist in the development of these facilities for his own advantage. I have tried to show that particularly in the study of early disease, and in the treatment of chronic disease, the general practitioner has a vantage position in which he has unexcelled opportunities. I have tried to outline some of the requisites which seem to me to be important in the utilization of his material for investigation. I would like to repeat my emphasis upon the keeping of records, the utilization of existing laboratory facilities, and lastly, the cultivation of a viewpoint which will tend toward investigation and which will progressively cease to countenance any derogatory estimate of the value of the general practitioner, not only to the community, but to the medical profession.

Finally, by his investigations, the medical practitioner, like the laboratory worker, will only very rarely indeed make important scientific discoveries, but both the practitioner and the laboratory worker will prodigiously benefit themselves by their investigations. The benefit is not solely selfish, certainly not in the case of the general practitioner, because the community will be the ultimate gainer.

A CASE OF RECURRENT BILATERAL PNEUMOTHORAX.

BY JOHN B. HAWES, 2ND, M.D., BOSTON.

IN a recent issue of this JOURNAL,* Morrison reports a case of recurrent spontaneous pneumothorax. In view of the interest in such cases and the fact that they are frequently overlooked and wrongly diagnosed, I am reporting a similar case of my own. The striking points of this case are:

1. That the pneumothorax when on the left side caused attacks of pain closely resembling angina and neuritis in the left shoulder and arm and when on the right side pain which at one time was thought to be due to disease of the gall-bladder.

2. The rather robust good health of the patient during the intervals between attacks and the absence of any permanent clinical signs of pulmonary tuberculosis, although during and shortly after his attacks of pneumothorax such signs were apparently plainly evident.

The details of this case are as follows:

F. E. G., age 27, married. Family history excellent; two brothers, one sister, wife and one child alive and well. Habits very good.

Previous History.—In the past, he had always been well and strong, with the exception of the usual children's diseases. Aside from these, he had never had any serious illness. His maximum weight was 138 some years previous to my first examination. His weight at that time was 130.

Present Illness.—In 1911, when feeling perfectly well, he came down with a sudden attack of shortness of breath, pain in the right side of his chest, especially in the right shoulder-blade. There was a slight cough

*BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. 185, No. 22, Dec. 1, 1921, p. 659: "A Case of Recurrent Spontaneous Pneumothorax," Hyman Morrison, M.D., Boston.

which lasted two weeks, during which time he did not go to bed. There was no fever and his cough soon disappeared, leaving him feeling perfectly well. Since this first attack in 1911, at intervals of approximately every six months, with the exception of one two-year period when he was free from this trouble, he has had attacks similar to this one above described except that the pain has been on alternate sides. The striking feature of these attacks has been pain which comes on instantly without any warning, even when he is feeling perfectly well. This pain has apparently no relation to exercise or eating. It never comes on at night. When the attack is on the right side there is some soreness in the region of the gall-bladder. Never, however, has there been any jaundice or bile in the urine. He takes aspirin up to 40 grains daily to gain relief. He states very definitely that it is the pain which bothers him, and not the shortness of breath. When I first saw him, August 8, 1917, he had just been getting over such an attack on the right side, but on that day had had a mild attack of pain on the left. He has seen many physicians in this city and has had thirteen x-rays.

On physical examination, I could find nothing wrong with his lungs or elsewhere, except a temperature of 99.2 and a pulse of 96, apparently of nervous origin.

He took his temperature and pulse four times a day at home, and reported to me again on August 13, 1917. Temperature and pulse during this period were absolutely normal, and again my examination was negative. The urine, blood and sputum were likewise perfectly normal.

The remarkable point in this case is the fact that when I first saw him he brought with him an x-ray plate, taken by Dr. Arial George of this city, about ten days before, which clearly showed practically a complete pneumothorax on the right side. This x-ray was taken on account of suspicious symptoms referred to the gall-bladder, and the pneumothorax was found purely by accident. I admit frankly that I found it difficult to believe the evidence, even though presented by the x-ray.

October 31st, 1917, nearly three months later, I saw this man again. He told me that he had been perfectly well up to six days previous, when he had been taken with another severe attack of "neuritis," this time on the left side of his chest and in the left shoulder-blade. There was no cough or sputum. It was not so severe but that aspirin could control it. After three days of this, there was a sudden, much more severe attack of pain associated with some shortness of breath, doubling him up to the left, along with coughing and sputum. His family physician in Brookline sent him to see Dr. E. W. Taylor of this city for an opinion concerning this so-called neuritis. Dr. Taylor found nothing to account for the pain, but did discover an irregular heart for which he, in turn, sent him to the Peter Bent Brigham Hospital. Here the heart was found to be normal, but x-ray showed a complete pneumothorax on the left side.

Physical examination at this time—October 31st—showed increased voice and breath sounds at the right apex, with a few fine crackles in the region of the spine of the scapula behind on the right. The lower one-half of the left chest was hyper-resonant, with nearly absent voice and breath sounds. The heart was slightly to the right. Examination of the sputum was negative.

Two weeks later I saw him again. Although his symptoms were subsiding, he still had a slight cough with raising in the morning, and found it difficult to sleep on his left side. There was evidently still some air in the left pleural cavity.

December 17,—a month later,—I saw him again, when he was feeling very well, with no symptoms of any kind. His lungs at that time appeared to be perfectly normal. He went to Saranac Lake, but remained only three weeks. An x-ray taken at the Trudeau Sanatorium, according to the report given me by the late Dr. Robert C. Paterson, showed "about as healthy a pair of lungs as it is possible to see. There are some adhesions between the right lower lobe and the diaphragm. These and a few apparently calcified tubercles are the only things that are at all noteworthy."

On October 19, 1918, when I next saw this patient, he told me that he had been accepted for the army, although he had been rejected for aviation on account of muscular eye trouble.

Four months later,—February 6, 1919,—I again saw him. He reported that he saw only one day of service and likewise that he had had no more attacks of pain or pneumothorax. His complaint at this time was weakness and lack of energy. I could find nothing wrong with his lungs.

Six weeks later,—March 25, 1919,—he came to see me again, looking well, up to the maximum weight, but complaining of soreness in the center of his chest, increased on coughing. I could find nothing wrong with his lungs in any way.

December 27, 1919,—nine months later,—I saw him for the last time. He had been perfectly well during this period, until the night previous to this visit when, out at dinner, he was taken with a very bad pain in the left chest, with shortness of breath, coming on suddenly out of a clear sky, without warning. An x-ray of his chest taken at this time by Dr. Arial W. George and Dr. Ralph D. Leonard, dated December 29th, 1919, is as follows:

"We find a pneumothorax on the left side, due to partial collapse of the left upper lobe. There is no x-ray evidence of any active disease in either lung."

There was considerable shock, prostration, and great pain accompanying this last attack, apparently a very severe one. Physical examination showed the heart to be two inches to the right. The right lung appeared to be normal; the left chest was hyper-resonant all over, except in the base and axillary region, where there was dulness, with numerous rubs and dry râles. There was diminished and almost absent breathing elsewhere, especially over the back on the left, where there were practically no breath sounds to be heard.

Since this last examination of December, 1919, I have not seen or heard from this patient until December, 1921, when I received word from him in Florida, where he had established himself in the cultivation of oranges. He wrote as follows:

"My health has been very good for the past two years. I have had several attacks of my old trouble, but they have been very slight, and pass away in a few days. The attacks seem to come in periods of six months. They do not trouble me very much, except to cause pains in my chest and back, around my shoulder; also there is some shortness of breath for a little while. I feel sure that neither of my lungs has collapsed to any great extent. The pains I have are like pleurisy, and do not stay in any one place. I am living out-doors, practically the whole time, and outside of the few troubles mentioned above, my general health is fine. My weight remains about the same—125 pounds—and I am able to do quite a lot of out-door work around my farm."

This is a striking and interesting case, demonstrating various important facts:

1. It demonstrates clearly what is to me an important and encouraging point, namely, the curability of tuberculosis. There have been a dozen times in the past ten years that this young man has had these attacks of pneumothorax when moisture in the way of râles, rubs, etc., have been present in his chest, but which have entirely cleared up, apparently, in two or three weeks' time.

2. It has shown, as mentioned before, that these attacks of pneumothorax, especially the mild ones, may closely simulate other non-pulmonary conditions, such as neuritis, gall-bladder disease, angina, etc.

3. Finally, it has shown the need of the routine careful examination of the chest, even under conditions when the symptoms do not point directly toward heart or lung disease.

THE American Association of Anaesthetists and the Mid-Western Association of Anaesthetists will hold a joint meeting in St. Louis, May 23–24, at Hotel Jefferson, the first three days of the A.M.A.

PRESENT CONCEPTION OF COLON PYELITIS AS REGARDS TREATMENT.*

BY E. GRANVILLE CRABTREE, M.D., BOSTON.

IN this brief communication I plan to give what surveys of recent literature as well as my own experience, gleaned from cases seen during the past two years, indicated to be worth-while procedures in the handling of colon pyelitis. I shall not attempt to give any of the arguments on which this work is based.

ACUTE PYELONEPHRITIS.

A survey of the reports from a number of observers in many different clinics shows that, irrespective of the drugs used, the prognosis for cure of acute colon bacillus infections of the kidney is about equally good. All have made use of the same essentials of treatment; namely, rest in bed, light diet, forced fluids, and the treatment of pain and bladder distress by appropriate drugs. Some observers have done nothing further. Most observers prefer to alkalinize the urine with sodium bicarbonate or sodium citrate at the beginning of the infection, some preferring to use sodium citrate after a short course of hexamethylenamine. In still other instances the course of the disease has been studied in cases where the intake of fluid has been kept low to insure greater concentration of the formalin in the urinary passages. The majority seem to prefer hexamethylenamine given with copious intakes of fluid. Since the results are not vitally different under these various forms of treatment we are justified in considering acute colon pyelitis somewhat in the nature of a self-limited condition in which the aim of the physician in charge is to contribute to the comfort of the patient and to give those drugs which are best tolerated in that particular individual. It is undeniable that certain inflamed bladders will tolerate hexamethylenamine and that others are aggravated by it but will be made comfortable by either complete alkalinization of the urine or reducing acidity by the alkali drugs. Cystoscopic examination and bladder instrumentation are usually contraindicated during the acute stages of the disease.

CHRONIC PYELITIS.

Acute pyelonephritis, whether it marks the onset of the infection or is an exacerbation of a chronic condition, in its quiescent state becomes pyelitis. In this form it is capable of persisting for an indefinite period of time. I have endeavored to determine some facts as to what becomes of these cases. They fall into three classes.

1. Many infections disappear completely and patients remain cured after a few weeks

*Read at a meeting of the Out-Patient Staff of the Massachusetts General Hospital, January 25, 1922.

of symptoms. The exact percentage of these early cures will probably never be known. They are not a hospital type of case. They are most frequently seen by the general practitioner. No method of procuring accurate data is apparent to me.

2. Cases from which infection disappears within a few months or perhaps a year. We have pyelograms and complete data, obtained in the subacute stage of disease in a group of these cases, and know definitely that the duration of the disease has been but a matter of a few months. Pyelograms in these cases have invariably shown normal kidneys. In a few instances recovery has taken place at a later date after a number of years and a variety of treatments. The percentage of these latter cases has been small, and complications such as pregnancy and infectious diseases have been frequent interruptions to the course of the disease.

3. Chronic, persistent pyelitis. Compared with the incidence of infection, this group is probably small. It is likewise the group commonly seen in hospital practice. It is made up of two classes of cases: one, those with foci of reinfection such as teeth, colon stasis, etc.; the second, those cases in which there is urinary tract or pelvic stasis. Most of the stasis concerned in pyelitis is ureteral and within the pelvis.

As a working basis for the treatment of these cases of chronic, persistent pyelitis we have considered two years' duration to be a fair test for spontaneous recovery of the uncomplicated pyelitis. Patients in whom pyelitis has persisted for two years or longer, we believe to be entitled to a complete urinary tract examination. The results of two years of such investigation have shown us that pathology is found in a very high percentage of the cases. This percentage is somewhere between 75 and 85%. The problem now before the urologist is to devise a standard by which early obstructive changes in the kidney can be recognized and correction made before permanent damage, which may result in the loss of the kidney, takes place. That this destructive process is a matter of years seems to me to be certain. I am equally assured that certain of these cases can be cured by proper cystoscopic procedures or surgical procedures.

TREATMENT.

Recently three procedures for the treatment of chronic pyelitis have been added to the drug treatment on which we have previously relied. These are: (1) Pelvic lavage. (2) Over-dilatation of the ureters by method of Hunner. (3) Renal suspensions and plastics on the ureter for early renal stasis.

Drugs: During the chronic stages of the disease hexamethylenamine seems to be the accepted drug. In some instances lavage with silver nitrate is better tolerated in alkaline urine.

Pelvic lavage with some antiseptic solution, of which silver nitrate and mercurochrome give best satisfaction, has already proved its usefulness. I personally have found it most useful in the treatment of those cases in which there is considerable pus in the urine. It has been possible to reduce these to a bacilluria which is tolerated by the patient with much less severe symptoms than the purulent urine, and to produce actual cure in some. As a means of actual sterilization of the urine, its results have not been so striking.

Over-dilatation of the ureters (by the method of Hunner) I have found useful, particularly in cases of considerable bilateral pelvic and ureteral damage, in some instances associated with cystitis cystica and presumable cystic degeneration of the ureteral mucosa. In two or three instances it has given relief in cases of pyelitis which followed in onset pelvic inflammatory changes and in which there was dilatation of the ureters in the upper portions. In strictured ureters the dilatation of the stricture is of course taken for granted.

Better development of pyelograms has demonstrated the remarkable frequency of sagging of the kidneys with kinking of the ureter while the patient is in the upright position. The resultant slow dilatation of the renal pelvis is very frequently accompanied by pain. Many of these pelves are found uninfected. In many this pathology exists previous to the onset of the infection, in others it develops after the incidence of infection. In any case such a kidney, once infected, retains infection unless some remedial measure is applied. Plastic operations, suspensions and freeing of the ureters have given us cures in early cases of this type. Plastics, after extensive damage has taken place, are usually unsuccessful.

In some instances, in spite of negative x-rays, small "ball valve" stones can be demonstrated by pyelogram and wax-tipped catheter. Removal of these greatly benefits, if not actually cures, the pyelitis behind them.

In certain instances there is very extensive damage to the ureter and pelvis with still useful and even good kidney substance above it. Often this condition is bilateral. These kidneys must be treated by palliation unless symptoms are intolerable. Palliation is chiefly through lavage.

WARNINGS.

1. The operation for suspension of the kidney has rather generally fallen into disrepute. To a great extent this reputation is deserved. By no means all sagging kidneys need tampering with. We believe that those should be considered to demand fixation only when, as

a result of function tests and pyelogram, definite stasis can be determined. That this stasis produces changes comparatively rapidly (within a year) has been demonstrated. All suspensions are now being followed in the hospital by frequent pyelograms to enable us to make a final definite statement as to whether suspension will not only give relief from pain and allow us to cure the infection of the pelvis, but will also arrest the destructive changes in the kidney.

2. It cannot be emphasized too greatly that the cure of pyelitis, as well as the existence of it, must be determined by the presence of bacteria in the urine, not by the presence or absence of pus cells and symptoms. Many patients who have had two or three attacks of pyelonephritis are considered to have had reinfections when in fact a colon bacilluria has been present throughout the intervening periods of freedom from symptoms.

Needless to say, it is my hope that as a result of study, certain cases may be recognized as capable of cure without particular treatment; that valuable means of treatment, such as pelvic lavage, may not, through misapplication to hopeless types of renal damage, receive undue discredit; that by recognizing early renal stasis we may be enabled to cure otherwise permanent colon bacillus infections and, finally, that by early recognition of these cases conservation surgery may be done to preserve from further damage good kidneys in which there is both infection and stasis. We have evidence to show that these two conditions produce destructive changes in the kidneys which tend toward pyonephrosis.

Medical Progress.

PROGRESS IN LARYNGOLOGY.

BY HARRIS P. MOSHER, M.D., BOSTON, AND GORDON BARRY, M.D.

A REVIEW of the recent literature dealing with laryngology shows progress in a good many lines. In nasal plastic surgery, both external and internal, laryngologists are applying the perfected technic of their army days. The lachrymal sac and nasal duct operation has been refined. Retrobulbar neuritis receives prominent attention. As bronchoscopy and esophagoscopy are being more generally employed, contributions of unusual cases are increasing; while an assembling of the already extensive data and its classification into types tends to standardize this work. The usual number of new suggestions in tonsillectomy instrumentarium are forthcoming. Internists are becoming increasingly conscious of infective foci as causes of systemic disease. Chronic infections about the teeth, tonsils, and sinuses which formerly were considered too mild to require operative drainage, are now blamed for many systemic complications; and the internist who insists on the elimination of these low-grade infections is reporting resulting cures. Pulmonary complications following tonsillectomy are discussed. The value of the Schick test is more definitely outlined. The more general use of the skiagraph has checked up the dentist and the oral surgeon. Closer coöperation obtains between the laryngologist and the dentist. Finally, the radiologist and roentgenologist have offered real help in the control of both infectious and malignant diseases.

ACCESSORY SINUSES.

L. W. Dean (Iowa City) reports from an extensive experience with suppurative sinusitis in children. In most cases, the removal of the tonsils and adenoids cleared the process. But in many, turbinotomies had to be done and even radical sinus operations. All the cases were x-rayed. This was necessary not only for diagnosis but to facilitate proper operative orientation; for in small children the antrum is small and not as easily entered. In the discussion, some of the members of the American Laryngological Society, before whom it was read, expressed surprise that Dr. Dean had found it necessary to take such radical measures in children so young. The reply was that radical interference was only undertaken after lesser measures had failed, and that these extreme cases had nephritis, pyelitis, endocarditis, arthritis, or some similarly grave condition which did not yield until the sinus infection had been cleared. He thought that local severe climatic conditions were responsible for his having such stubborn cases.

Joseph C. Beck (Chicago) suggests a modified Lothrop operation for the simpler frontal sinus suppurations. He would make a small external incision and remove only a large enough table of bone to permit easy operative access to the diseased sinus and to the septum between the two frontals. He would break down this frontal septum and then stop the operation. To curette the naso-frontal duct and anterior ethmoid cells on the diseased side is only to invite later granulations and obstructing adhesions. Removing the frontal septum would let the diseased sinus drain into the well frontal sinus and out through the well and patent naso-frontal duct. This would let the diseased frontal duct clear of itself. He suggests this for the acute cases where a radical Killian operation is not called for. The reader will think of objections and advantages in this procedure. It offers a new approach.

R. C. Lynch (New Orleans) describes the technic of his radical frontal sinus operation. The method resembles closely that of Killian, with one important difference. The initial incision is the same, but then the soft tissues are

dissected down and the frontal sinus entered from below through the roof of the orbit, not through the anterior frontal table. When he has taken away all of the floor and cleaned out his sinus, he then proceeds with the ethmoidal and sphenoidal part as in the regular Killian operation. He tries to remove all the mucous membrane from these sinuses and then swabs the raw bone surfaces with tincture of iodine.

Ralph Butler (Philadelphia) reviews the literature and finds fifty-five cases of meningitis consequent on frontal sinus infection. He reports three fatalities of his own.

RETROBULBAR NEURITIS.

An interesting and very instructive discussion was opened by Harvey Cushing's paper on acoustic neuromas before the American Laryngological, Rhinological and Otological Society, in Boston, in 1920. He thinks that brain tumors are probably more frequent than abdominal tumors. Out of his series of about one thousand brain tumors, five hundred had histological verification, of which forty-five, or almost ten per cent., showed involvement of the acoustic nerve. Among other symptoms these acoustic neuromas showed choked disc and blindness, which encouraged the ophthalmologist to think that he was dealing with a retrobulbar neuritis of posterior ethmoidal or sphenoidal origin. "Only intracranial tension can produce choked discs; I am exceedingly doubtful whether inflammation of the sinuses can cause this symptom. A retrobulbar neuritis does not cause swelling of the nerve head. . . . A choked disc is due to mechanical, not to inflammatory causes, and 'optic neuritis' is a misnomer." He adds: "Unhappily we find that many of our tumor cases have been subjected to previous ethmoidal operations. . . . Otologists must see many of these cases in their incipiency, and it is important for them to realize that one out of every ten or twelve brain tumor cases belongs to this group of acoustic tumors. But in any event do not let us be misguided into the belief that no harm is done to patients with threatened loss of vision due to optic neuritis if they have their turbinates removed and sinuses indiscriminately opened. No greater discredit could possibly come to rhinology as a specialty than the sort of loose thinking and writing which has been given to this subject."

In discussing the paper G. E. Shambaugh (Chicago) remarked on "the prevalence of looseness in our thinking about, and work on the nose. If there is intranasal trouble there should be enough evidence for operative interference in the nasal sinuses or in the skiagraph."

Since this paper, several articles have appeared on retrobulbar neuritis. W. E. Sauer (St. Louis) says that erroneous operative work in these cases may be ascribed to errors in judgment rather than to carelessness. J. W. Jervey (Greenville, S. C.) refers to a case of retrobulbar neuritis which cleared after removing a cystic middle turbinate and irrigating a large quantity of pus from the antrum. H. B. Lemere (Omaha) and J. A. White (Richmond) also reported each a case which cleared promptly under antrum irrigations. The late Christian Holmes (Cincinnati) is quoted as believing that forty per cent. of all eye diseases had their origin in the nasal accessory sinuses. Onodi has written exhaustively on this subject.

The best recent papers on the subject found were by Leon A. White (Boston), appearing in the Boston Medical and Surgical Journal, on August 24 and October 20, 1921. This writer feels that Cushing's criticism of the unwarranted opening of accessory sinuses, in loss of vision due to intracranial lesions, is just, but fears that the pendulum will swing to the extreme of too great conservatism unless an effort is made to discover a happy medium. In these papers he reviews thirty-three of his own cases of retrobulbar neuritis and quotes from other authors. Space does not permit extensive quotations; a few will help to support the argument. De Schweinitz says: "The most important group of ocular complications of nasal sinus disease are those in which there is sinusitis without external signs or orbital inflammation; there is an optic neuritis or a neuro-retinitis without marked ophthalmic changes, simply a central scotoma. The scotoma may be unilateral—the more usual condition—or bilateral, and most frequently depends upon disease of the posterior ethmoidal cells or the sphenoid sinus. . . . The prognosis of optic neuritis depends upon the cause and the duration of the process. If the focus of disease, for instance, in the accessory sinuses can be removed, vision may be saved and edema and inflammation will subside. Untreated optic neuritis almost always produces blindness." Arnold Knapp says: "Optic neuritis occurs in two forms; one during the course of suppurative sinusitis, the other where there is a typical retrobulbar neuritis and the rhinoscopic examination is negative. In the latter cases exploratory operation reveals a latent infection." Onodi adds: "I must emphasize this fact, that in those cases of sight derangements in which the oculist cannot confirm the cause, and the suspicion of nasal connection exists, even though the findings be negative, it seems best to take explorative measures and to seek the cause in the accessory sinuses." Paul Roamer says: "Frequently the trouble begins with an acute disturbance of vision, usually a central scotoma, after which the neuritis appears. When we find no plausible and satisfactory explanation of an optic neuritis, the accessory sinuses must be carefully

examined, for in many cases immediate operative treatment can save a part of the vision."

In reviewing the clinical pathology of his own cases White "discovered that the one almost constant finding was enlargement of the turbinate tissue adjacent to the sphenoidal ostium. It was also quite usual to have a posterior deflection of the septum crowding the already poorly ventilated regions of the posterior sinuses. . . . Pus was rarely found at operation; and in many cases the roentgenograms were practically negative. . . . Earlier writers considered the anatomical relations of the optic nerve to the accessory sinuses to be the chief etiological factor. Later ones claimed the trouble was transmitted by the soft tissue. No one etiological condition is responsible for all cases. Purulent infection accounts for a few. A chronic sinus infection would be less likely to extend to the optic nerve. The size and position of the middle and superior turbinates explain the etiology in a large number. Poor ventilation and faulty drainage are all-important factors. . . . Cultures when taken all gave some growth, principally the staphylococcus albus." White recommends "the opening of the accessory sinuses for sudden loss of vision, after the exclusion of other causes, even with negative nasal findings. As the inflammation incident to this infection is frequently of the exudative but non-suppurative type, the roentgenograms are practically negative." A toxemia from other possible infected foci should be carefully considered before an operation on the sinuses is resorted to.

An operation, if done, should be prompt: "The optic nerve may be permanently damaged within eleven days." White finds that a radical exenteration of the ethmoids and the sphenoids is unnecessary and increases the operative risk unjustifiably. "In the method I advocate, only enough of the turbinate tissue needed to obtain access to the front wall of the sphenoid is removed. The nasal portion of the anterior sphenoidal wall is taken down and only the posterior ethmoid cell opened. There is no indication for exenterating the ethmoids unless they are so diseased that they need removal irrespective of the visual disturbance. The ventilation and depletion incident to the operation outlined will relieve the pressure and infection about the nerve." No nasal packing is used. If taken early, visual improvement in these cases is prompt.

LYMPH DRAINAGE OF SINUSES.

Mullin and Ryder (Colorado Springs) report an interesting piece of research work done on the maxillary sinus in rabbits and the frontal sinus in rats, to determine the lymph drainage of these sinuses. India ink was used as the experiment fluid. They found that there was almost no absorption of the ink through the uninjured mucous membrane surfaces of the nose. When injury to the mucous membrane of the nose or sinuses permitted fluid absorption, the lymph channels carrying it were along soft tissue, not through bone substance. A free anastomosis existed between lymph channels. After absorption of the fluid from the antrum, it passed forward and down to the submaxillary nodes, and backward and down to the retropharyngeal nodes. From these it passed to the deep cervical nodes and thus into the venous circulation. Rarely the fluid reached the subparotid and retrosternal nodes. The course of the fluid absorbed by the frontal sinus membrane was the same. If the fluid in this sinus was under pressure, it also passed back through the posterior frontal sinus wall to the dura. From the meninges, the fluid passed to the submaxillary and retropharyngeal nodes.

The moot question of direct involvement of the lungs from the lymph stream is raised and answered in the negative. In these experiments the fluid passed to the lung: (1) by inhalation from the nose, (2) through the lymph channels into the venous circulation, then direct to the heart and thence to the lung through the blood stream. In contradistinction to this view, Freudenthal thinks the nasopharynx the chief site of external infection entering the system and that it is carried from there to the apical pleura by the lymph stream. Other writers share Freudenthal's opinion.

THE LACHRYMAL SAC.

J. J. Gilbert reports the results in forty-five cases where the tear sac was removed. No case was free from epiphora one and a half years after the operation. In fifty per cent. it lasted two to five years after the operation.

Increasingly, different writers are advocating the establishment of drainage into the nose above the inferior turbinate to care for these rebellious cases of dacryocystitis or nasal-duct stricture. The ophthalmologist is abandoning the cystectomy for this more successful procedure. C. F. Bookwater reports fifty-five cases with only six needing any considerable after-care, on account of granulations in the nose. He does the entire operation from within the nose. First a muco-periosteal flap is turned down in front of the middle turbinate. Then the bone is pierced with a West chisel and enlarged with a punch. The sac can then be reached with a curved forcep, pulled into view and incised along its entire length. A proper sized round hole is made in the flap opposite the sac, and then the flap is replaced. Clifford B. Walker advocates a similar method. He, however, considers the flap unimportant. He enters through the bone with a burr, and removes the nasal

wall of the sac. Eighty per cent. of his cases gave perfect results.

H. P. Mosher (Boston) writes a comprehensive article on "re-establishing intranasal drainage of the lachrymal sac" in the July, 1921, *Laryngoscope*, in which he reviews his research work and experiences of the past five years. Twelve cases were operated upon by the intranasal method, twenty-five by the combined external and internal operation. As to the relative value of the internal or the combined external and internal methods, Mosher says: "Either operation will cure suppuration in the sac and both will lessen or abolish epiphora. Both operations are still on trial as to the permanency of their results. The intranasal operation is a blind procedure; there is constant risk of infecting the orbit. There is little such risk if the operation is done by sight by the combined method. In old-standing, difficult cases the combined method offers the best chance of success." The matter of the scar has caused some objection. With experience, the operator will be able to make this as invisible as the very fine Killian scar. After reporting the interesting phases of his thirty-seven cases, Mosher takes up carefully the anatomy of this region, illustrating it with original drawings. The descriptive anatomy and the detailed account of the operative steps will materially help him who would familiarize himself with this operation.

The operation is described in four steps. The patient is under ether anesthesia and in the upright position. In the first step, the anterior end of the middle turbinate is removed intranasally. If the septum crowds over to this side, enough should be resected submucously to remove this obstruction. This part may be done under cocaine a few days before. The second step exposes the lachrymal sac through a vertical incision over the ascending process of the superior maxilla, and frees it from its bed. Third, a bony opening, about the size of the sac, is made into the nose immediately opposite the sac. Fourth, the inner half of the wall of the sac is removed, and also the inner wall of the nasal duct. Over-lapping tags of middle turbinate and ethmoid cells are trimmed flush with the opening. A light intra-nasal packing of vaseline gauze is applied to the anterior ethmoid region, and the external incision is sutured. In his after-care, he leaves a pressure bandage on the eye for two days, removing it daily to cleanse the eye. The nasal packing remains one to two days, rarely four days. No probing has been necessary. If any sign of puffiness appears in the wound, it is opened at the lower half. Even in suppurative cases healing is often by first intention. As to the results at date of reporting he says of one series of eighteen, that fourteen were completely cured of epiphora, and the other four gave partial success. Of another series of eleven, ten had their epiphora stop from within three days to six weeks after the operation, not to return. Refinements and changes will develop in the technic but at present intra-nasal drainage of the sac and by the combined operative method seems the safest and surest means to cure this difficult type of case.

THE TONSILS.

The tonsil continues naturally to hold a prominent place in laryngological literature. Various new instruments are offered. The more interesting papers deal with two diametrically different viewpoints; one, the question of those cases where operative work fails to help; the other the happy results from tonsil removal. In the first group, Grant Selfridge (San Francisco) pertinently reminds us that "all diseases between fallen arches and alopecia areata have been attributed to the tonsils, whether diseased or not." After several operated children had returned to his office, showing no improvement, he began carefully to investigate the cause of these surgical failures. From extensive investigation and inquiry he concludes "that the evidence points to an interrelation of the tonsil with the ductless gland system, and that the failure to recognize such relationship helps to explain, to my mind at least, the cause of failures, such as have been encountered by myself." He does not decry the operation in properly selected cases, but he urges more careful initial study of each case. Any sign of disfunction in the ductless glands should be treated first. He quotes McGarrison's recent work on "The Thyroid," which gives mouth-breathing, adenoids and lymphatic enlargement, and slowness to talk, as symptoms of hypothyroidism. Leonard Williams says "Adenoids and enlarged tonsils occur in children who have an inadequate supply of thyroid secretion." In his metabolic studies in southern Germany and Switzerland, Janney, of Santa Barbara, frequently noted tonsils of enormous size in cretins. "The giving of thyroid extract brought about marked reduction in size and frequently almost complete disappearance of the tonsils." Bordley, of Baltimore, suggests that the frequent hypertrophy of other lymphoid tissue in Waldeyer's ring after tonsillectomy is "nature's effort to give to the economy a needed substance which surgery has removed." Several authors who found an association between status lymphaticus and hypertrophied tonsils and adenoids are quoted. He concludes with a plea for greater discrimination in the selection of operative cases.

Other papers deal with the other side of the picture. S. S. Watkins, writing in the *Kentucky Medical Journal*, gives a list of indications for tonsillectomy almost as inclusive as

the above quoted writer suggests. Gastritis, bronchitis, tubercular adenitis, infectious arthritis, endocarditis, chorea, acute nephritis, fever without cause, and anemia are in the list; while strangely enough he finds that cases of chronic suppurative otitis media are not helped by operation. F. E. Shipway (*American Journal of Surgery*, January, 1921) gives the results of ninety-four tonsil and adenoid operations in their cardiac clinic. Lymph nodes were present before operation in fifty-nine per cent., reduced in forty-one per cent., no change in seven per cent. Some of the large nodes disappeared in six days. Rheumatic fever had been present in forty-two cases. There was no recurrence in eighty-four per cent. Chorea was present in forty cases with no recurrence after operation in fifty per cent. Sixty-one cases had bone or joint pains and showed no recurrence in seventy-seven per cent. Seventy-three per cent. of the ninety-four had had recurrent tonsillitis before operation while only seven per cent. had any sore throats after operation. If the reader is connected with a large ear clinic, he will doubtless recall that less old chronic discharging ears have been crowding the clinic since the tonsil operative work on the school children has been more widespread. Interesting data are beginning to be compiled by the insurance companies which find that the risk of a man with a history of rheumatic fever is better if his tonsils are out.

LUNG ABSCESSES FOLLOWING TONSILLECTOMY.

It appears that the first case of lung abscess following tonsillectomy to be reported was by C. W. Richardson, of Washington, in 1912. Bassin, of Paris, followed, in 1915, with a series of nineteen cases; and Manges, of New York, in 1916, with six cases. Many more have followed. Fisher and Cohen (Philadelphia) report five more. Reviewing the literature they find a total of seventy-six cases of pulmonary complications following tonsillectomy, many of them fatal. Seventy-four were operated upon under general anesthesia, and so far as known, ether was used. All but four occurred in adults. Where physical findings were available, the favorite site of the lesion was stated to be the right lung, either the middle or lower lobe being involved. Some authors claim that the motor-driven ether apparatus is responsible for this recent increase in pulmonary complications. Fisher and Cohen think that emboli reach the lung through the lymph or blood stream chiefly. Richardson, Carmody, Lynah, and Herr all think that these complications are due to the aspiration of septic material during the operation. Richardson has prevented this accident by having the head lower than the larynx and using suction. Richards, of Fall River, claims that the position of the patient has nothing to do with the matter. He has had three cases, and in both upright and prone positions. The careful use of the suction apparatus avoids trouble with him. Lynah states there have been nine lung abscess cases following tonsil operation at the Lenox Hill Hospital. By prompt bronchoscopic treatment he was able to materially hasten convalescence. Most of these cases get well, while pulmonary embolic cases usually have a speedy and fatal end. Carmody (Denver) thinks that a light ether anesthesia prevents aspiration of blood and septic material, while Welty (San Francisco) thinks a patient bleeds much less under complete anesthesia and only thus can lung complications be prevented. Carmody thinks a motor-driven apparatus is advisable and lays especial stress on the warning of the ether vapor. G. F. Keiper (Lafayette) quotes Glendenning as saying that the motor-driven ether apparatus is responsible, though Keiper himself uses such. Cutler and Hunt, who are general surgeons, report "that in from thirty to fifty of all kinds of cases in which operation is performed, one patient develops lung complications, and that one in from one hundred and fifty to one hundred and eighty-five patients dies from such complications." Keiper thinks that the presence of an acute infection at the time of operation accounts for the lung abscess. Margaret Butler (Philadelphia) thinks that a previous history of lung involvement would be found in most of these cases. Fisher (Philadelphia) argues that this accident does not occur when the patient is operated under local anesthesia, and urges that all adult cases be so operated. Barnhill (Cincinnati) reports a case of lung abscess after a tonsillectomy under local anesthesia.

TONSIL ANESTHESIA.

As regards the use of local or general anesthesia for tonsil operative work there seems an equal diversity of opinion. The Boston School still prefers general ether anesthesia and the upright position, though there are exceptions to this. Most of the New York men seem to prefer ether, but in the prone position. Some prefer ether but with the head extended back below the level of the table. The Western men have used local anesthesia more than the Eastern. The local injection of one-tenth of one per cent. cocaine has been the preferred method at the Mayo Clinic. Quite a number are espousing the use of gas-oxygen anesthesia, especially in nephritic and diabetic cases. The disadvantage they find is in an increased blood pressure and more operative bleeding.

In connection with the subject of anesthesia may be noted two articles, one by F. E. Shipway on "intra-tracheal ether" in which he reports nine hundred and thirty cases, four hundred and seven of which were for operations on the face, sinuses, mouth, or pharynx. This series showed no post-operative septic pneu-

monias, six cases of post-operative bronchitis, no cases of post-operative shock. There were seven deaths and all in cases of advanced malignant disease. One of the advantages mentioned was the freedom from the danger of sucking in blood. . . . The other article was by Quimby Gallupe in which ether anesthesia was gained by the injection of a solution of ether into the vein. This was done for an inguinal hernia operation in a sixty-six year old alcholic in whom the usual ether anesthesia was thought to present a grave operative risk. Seven parts of ether were used to one hundred of isotonic salt solution at room temperature. This was introduced into a vein, first at the rate of five cubic centimeters per minute, but without effect. Carefully the amount was increased to ten cubic centimeters, and the patient became jocose. When fifteen cubic centimeters per minute were reached, a normal complete ether anesthesia was obtained. Twenty cubic centimeters was tried but this proved too much, and the dosage was dropped back to fifteen. The operation lasted twenty minutes and was uneventful. The patient came out of the anesthesia ten minutes after the intravenous ether solution was stopped. The writer claims that this method permitted a careful control, and thought it might prove helpful in certain types of cases.

Watson Williams, in an editorial in the *British Medical Journal*, reports the morbidity following the operative removal of tonsils and adenoids to be four times as great in out-patient as in house cases, and this in spite of carefully printed instructions which the out-patient cases were given. He thinks the reason is that these were sent home a few hours after operation while the house cases were kept in at least over one night. He deplores the crowded hospital conditions which permit so temporary a hospital sojourn.

LARYNGOSCOPY.

In surgery of the larynx, Lynch (New Orleans) reports good results in the removal of intra-laryngeal tumors by his suspension method. In discussion it was remarked that where Lynch's skill could handle this delicate and difficult task, the average laryngologist would probably continue to rely on the external route.

Jackson (Philadelphia) reports on removing one or both vocal cords by direct laryngoscopy in cases of bilateral vocal cord paralysis where the lack of muscular resistance causes the cords to suck together in inspiration and shut off the breathing.

Lynah has contributed to our armamentarium with his small tracheal tubes and cautery, and his graduated sounds for dilatation of laryngeal stenoses. These are the results of his unmatched experience as surgeon in charge of the laryngeal diphtheria cases in Greater New York.

For whooping-cough, Yankhauer (New York) injects four per cent. antipyrin on the vocal cords. He finds that this treatment may be almost considered specific, for the lessening of the spasms is prompt, and a rapid convalescence follows. In some cases, one injection was sufficient, in others, several were necessary. These are given daily. The author calls attention to the high mortality in this disease and invites the laryngologist to employ this means of lessening its severity.

T. W. Moore (Huntington, W. Va.) advocates the more frequent use of intra-tracheal injections. He prefers the indirect method of injection, using a throat mirror. Two per cent. guaiacol in liquid petrolatum has given much relief to his tubercular cases. Guyot and Bull use intra-tracheal injections daily for a period of three or four weeks in their laryngeal or pulmonary tubercular cases and claim remarkable results. They use olive oil with gomenol oil (5:100), three to five cubic centimeters at each injection.

W. Freudenthal (New York) read an exhaustive paper before the American Triological Society, in June, 1920, on advanced laryngeal tuberculosis. The importance of having the laryngologist treat these cases was emphasized. He injects an orthoform emulsion for the dysphagia and finds it not only comforting but healing because it enables the patient to eat more heartily. He insists that tuberculosis may be primary in the larynx. He deplores the removal of tonsils in latent tubercular cases as being likely to reawaken the process. As to the use of intra-tracheal injections in the gassed soldiers, Beck (Chicago) said that its effect appeared to be transitory, and that the men objected to it.

BRONCHOSCOPY.

A good many articles deal with the removal of foreign bodies from the bronchi. H. M. Taylor (Jacksonville) adds a new foreign body to the long list when he reports the removal of sand spurs which are prevalent in his region. Jackson, the dean in this work, presented an exhaustive paper before the American Triological Society, in 1921, in which he takes up the mechanical problems encountered in the extraction of foreign bodies in the bronchi and the esophagus. With an experience of eight hundred and ninety-one cases behind him, there is none better fitted to deal with this subject. Careful illustrations and an exhaustive discussion make this a valuable addition to the bronchoscopist's library. In another paper he points out that cases which were formerly considered hopeless are now proving possible of solution. He feels that with patience and care, and with

a thoughtful consideration of the mechanics in the given case, any foreign body that entered the lung by the natural channel can be taken out by the same channel.

Jackson also contributes a valuable article on the symptoms of foreign bodies in the air and food passages. He points out that frequently a foreign body may enter the bronchi with little or no irritation or coughing at the time of its inspiration. It may be weeks after the entrance of the foreign body before irritative symptoms develop. He dwells as follows on peanut kernels in the bronchus:

1. Initial laryngeal spasm is almost invariably present with foreign bodies of organic nature, such as nut kernels, peas, beans, maize, etc.

2. A diffuse purulent laryngo-tracheo bronchitis develops within twenty-four hours in children under two years.

3. Fever, toxemia, cyanosis, dyspnea and paroxysmal cough are promptly shown.

4. The child is unable to cough up the thick mucilaginous pus through the swollen larynx and may "drown in its own secretions" unless the offender be removed.

5. Lung abscess rapidly forms.

6. The older the child the less severe the reaction.

7. In the early stages an acute obstructive emphysema is present, manifested by: (a) limited expansion, (b) muffled tympanitic percussion note, (c) markedly diminished or absent breath sounds on the obstructed side, (d) many râles and harsh breathing on the free side.

8. The radiograph confirms these signs by showing (a) greater transparency on the obstructed side, (b) displacement of the heart toward the free side, (c) depression and limitation of the diaphragm motion on the obstructed side.

Pulmonary abscesses are discussed by Lynah (*Jour. A. M. A.*, Nov. 12, 1921). The author has made use of a mixture of oil and bismuth which he injects into the lung abscess through the bronchoscope. This technic was primarily to help the roentgenologist in mapping out the abscess, but was found to coöperate with the secondary x-rays toward healing. The causes of the author's thirty-eight cases are instructive. "Nine followed the sojourn of foreign bodies; eight, tonsillectomies; ten, post-diphtheritic abscesses; two, lobar pneumonia; one, an operation for gallstones; one, necrosis of the jaw. Three were of indefinite cause, probably post-influenzal. Two followed the aspiration of sea water, one was due to lympho-sarcoma, and one was not diagnosed, but had similar bronchoscopic findings." He finds that early operative interference gives the best hope of success; that bronchial stenoses should be kept open by dilatation in order to secure lung drainage; that fungating granulations should be removed and a ten to twenty per cent. silver nitrate solution applied to the area. Cavities can best be evacuated by suction. Oily solutions when injected into lung cavities are not coughed out as promptly as watery solutions. The evacuation of the pus from these lung abscess cases gives the patients such relief and the procedure is attended with so little discomfort that some beg for more frequent treatments.

THE ESOPHAGUS.

In a paper before the American Triological Society, in 1920, H. P. Mosher gave the results of his researches in the anatomy of the esophagus, particularly that of the cardiac end. Plaster casts and anatomical dissections of thirty adults and sixty baby cadavers furnished the material. Among other interesting points, Mosher calls attention to the constriction action of the crura of the diaphragm, especially to the left; to the varying length of the subdiaphragmatic esophagus, and to the pressure from in front of the left lobe of the liver. The esophagus has the liver on the right, in front and often on the left, so that it runs in a tunnel of liver. The chief points brought out by this study are the great variability of the esophagus in the adult, and what is a new point, its great variability at birth. In the adult a globular dilatation of the lower end of the esophagus just above the diaphragm caused by the pressure of the liver from the front and the constriction of the left crus from behind and from the left side is very common. This dilatation is often capped by an annular stricture. This stricture may be due to a former peptic ulcer of the lower end of the esophagus, or it may be a remnant of the segmental formation of the esophagus in some of the lower vertebrates."

J. Guisez (Paris) refers to this same annular stricture, which Mosher describes as a "crescentic mounding into the right half of the mouth of the esophagoscope." Guisez calls it a "semilunar valve partially closing the esophagus, and always found at the same spot, on a level with the opening in the diaphragm." This valvular condition, he thinks, causes an obstruction which is diagnosed as spasm of the esophagus. Food is retained more or less at this point, and sets up an irritation, increasing the spasm, which is only secondary. Treatment suggested is to soothe the irritation by restricting foods to non-coagulating fluids; supplemented by alkaline lavage, measures for dilatation, and circular electrolysis of the valve formation.

Seth Hirsch, director of the x-ray department of the New York Bellevue Hospital, reports two cases of "congenital atresia of the esophagus" and summarizes his review of the literature as

follows: "Up to July 1, 1920, one hundred and forty-six verified cases of atresia of the esophagus have been reported in infants. The commonest type is a blind upper sac, a lower sac opening into the trachea above the bifurcation; one hundred and three, or seventy per cent., are of this type. Accompanying abnormalities of other parts of the body are common. The most comprehensive explanation is failure of closure of the tracheo-esophageal septum." The most exhaustive study of this condition is by E. D. Plass from Johns Hopkins in 1919, an elaborate article covering the period from 1703 to 1916, with eighteen pages of bibliography.

Diverticula of the esophagus: A. D. Bevan (Chicago) differentiates between traction and pulsion diverticula. The former "may occur at any point, especially within the thorax, and as a rule they are caused by cicatricial contraction of some old inflammatory process drawing the wall of the esophagus outward and making more or less of a funnel-shaped diverticulum." The latter "always occur at exactly the same point, presenting themselves at the junction of the esophagus and the pharynx in the median line posteriorly. At this point there is a triangular area where the oblique muscles of the pharynx and the transverse circular muscles of the esophagus meet, leaving a small area not covered with musculature but simply by a subcutaneous layer." The neck of the pouch always remains comparatively small; the pouch itself may reach a size sufficient to hold twelve ounces. The cure is operative. Local anesthesia is invariably used by this author. A six-inch incision just in front of the sternocleidomastoid muscle takes one down to this region, with the large blood-vessels of the neck outside and the thyroid gland on the inside. The inferior thyroid artery is frequently met; if in the way, it is ligated and cut. The neck of the pouch is readily found by having the patient swallow. Usually the diverticulum lies in loose areolar tissues and can be easily pulled into view. It looks like a hernial sac. If no larger than a thumb, it is simply invaginated into the esophagus with three purse-string sutures. If larger, he cuts away the distal half, or runs sutures the length of the sac, puckering the distal half into the proximal, and then that in turn into the esophagus. A sac longer than the thumb when invaginated may be regurgitated and obstruct the breathing. Previously, leakage from the wound had made a high mortality, but the use of the skiagraph and perfected technic has served to establish the diagnosis and gain a cure in a far higher percentage during the past ten years.

Thomas Hubbard (Toledo) discusses "esophagismus," and considers it due to reverse peristalsis. He thinks it may be psychic, and to be referred in its nerve paths to the pharyngeal plexus. Lund and Foley (BOSTON MEDICAL AND SURGICAL JOURNAL) call attention to the fact that bleeding from a varicose vein in the lower esophagus may be the cause of blood in the stomach, rather than bleeding from the gastric ulcer. There is frequently found a plexus of veins circling the lower esophagus, and this area is somewhat prone to bleed. In old patients, with cirrhosis, profuse hemorrhage may occur from this source.

Caustic burns: Jackson (*Jour. A.M.A.*, July 2) discusses esophageal stenoses following burns. Their frequency is graphically illustrated by a picture of seven children, all of whom were receiving treatment at the same time for this condition at the Jefferson Hospital. He calls attention to the labels on these caustic lyes. The statement that they are a poison is likely to be tucked away inconspicuously in a corner. These lyes can be bought in the grocery store and are usually kept on the open kitchen shelf. On the other hand, drug poisons are required by law to bear conspicuous labels, and they are usually kept in a cabinet where the child in the house cannot reach them. He pleads for remedial legislation which will compel a more noticeable warning of the dangerous nature of these preparations. C. F. Theisen reports a case of ammonia burn which had five strictures. These were successfully dilated with flexible lead bougies.

Foreign Bodies: Jackson's paper on the mechanism of extracting foreign bodies from the esophagus and bronchi has been referred to. There are many other case reports on the diagnosis and removal of unusual foreign bodies.

Esophagoplasty: Two articles deal with reconstructing the esophagus. Dirschner (Berlin) recommends antethoracic reconstruction. He finds that ten cases have been published. He demonstrated by cadaver experimentation that the stomach could be cut free from the cardiac end of the esophagus, drawn out into a sausage shape, brought up in front of the chest, and sutured to the esophagus at the neck, the skin being sutured over the whole. He performed this operation on four; two with cancer succumbed in a few hours, one lived two weeks, to die of pneumonia, and one had completely recovered and was living. The posterior extrapleural route is recommended by Howard Lilienthal (New York). The operation was done in several stages. The ninth rib was resected, the sixth, seventh, and eighth were cut near the spine. The cancer, for which the operation was done, was removed through this opening two weeks later. This wait allowed a sealing off of the mediastinum. Then a skin flap was cut from the back and formed into a tube which was later swung into place and attached to the cut ends of the esophagus. A successful result was obtained, the patient swallowing soft foods normally. Occasional bougieing had been necessary.

DIPHTHERIA CARRIERS.

Moss, Guthrie and Marshall (*Johns Hopkins Bulletin*) found that the inoculation of avirulent diphtheria bacilli into healthy human throats would create diphtheria carriers. Two of these experimental cases lasted fifteen months. Previous antitoxin injections made no difference. There were no resulting objective changes in the throats. No diphtheria cases resulted from these carriers, nor did the avirulent diphtheria bacilli become virulent by their sojourn in the host. The paper concludes that avirulent diphtheria bacilli have no pathogenic importance to man; and that a diphtheria carrier does not constitute a menace to the health of the community.

DeLille and Marie (*Presse Médicale*, Jan., 1921) made a series of tests on the children in their clinic, with the following results: Age three to six years, reaction positive in fifty per cent.; age six to ten years, reaction positive in forty-seven per cent.; age ten to fifteen years, reaction positive in twenty-eight per cent. They found that antitoxin should be injected only into cases giving the positive Schick test reaction. Many cases of diphtheria carriers gave a negative Schick test. Where the test was positive, antitoxin helped; where the test was negative, the antitoxin gave no benefit.

RHINOPLASTY.

V. P. Blair (St. Louis) thinks that "the total restoration of the nose, while an interesting and thoroughly sporting surgical procedure, has in civil practice a very limited field compared with the correction of the more common nasal defects and incongruities." Unless the reconstructed nose can be made both functionally and cosmetically acceptable, it is better to give the patient a prosthesis. "The two essential advances in rhinoplasty during the war were the universal recognition that the lining is as essential as the external covering and, to a very much less degree, that the reconstructed parts should be cut from carefully made patterns. The most dependable tissue for covering the nose, and one which can also be used for the lining, is the skin and subcutaneous tissue of the forehead. The resulting defect can be immediately filled in by a full thickness skin graft from the abdomen. The next most adaptable tissue is skin from behind the ear, brought up on a long flap taken transversely from under the chin." For the supporting structure, he swings forward a piece of septum, or inserts a piece of bone or cartilage, or does a previous implantation of cartilage in the flap which he later swings into place. A bone transplant does not survive as well as a cartilage transplant, particularly if perichondrium is in contact with two-thirds of its circumference. The Thiersch graft makes the simplest lining, but the writer thinks that the graft of the future will be a full thickness, free skin or mucous membrane graft.

Pratt (Minneapolis) discusses refinements in septal plastic surgery. In case of an old septal perforation which he wishes to close, he frees part of the inferior turbinate and brings this over into the perforation, freshening the approximating edges. When union has been obtained, a second operation severs the pedicle attachment. If the perforation is a fresh operative one, he scarifies the nearest turbinate surface and packs the septum over against this. When local healing has been secured, he cuts the turbinal mucous membrane free from the turbinate, and the septum now swings to the mid-line, its perforation filled in by the transplant.

During the war the surgeons who were fortunate enough to see Giles' oroplastic work in England will recall the ingenious uses he made of flaps taken from turbinates and septum for reconstructing a columnella or ala or sunken nasal bridge.

OROPLASTY.

In operating for hare-lip, F. B. Moorehead (Chicago) prefers the age of from six to ten weeks. The first requisite is that the diet shall have been properly regulated. Feeding should be with a spoon or dropper. The nipple should not be used before or after operation. An electric vaporizer and aspirator is the best means of anesthesia. The operation divides itself into three parts. First, the jaw arch is to be exposed and the longer segment moulded back and fastened with wire to the shorter. This is very essential, as it gives a proper foundation for the subsequent steps. This does not disturb the posterior jaw alignment or the anterior teeth. Second, the defective nostril is brought into place and sutured. Third, the lip is cut to an equal and proper length, and sutured. If the first two steps are properly done, the third is simple. No undue tension should be present. No external dressings are employed. The wound is sponged once or twice daily with fifty per cent. alcohol and dusted with Thiersch powder. On the third and subsequent days, the sutures are removed until they are all out by the seventh or eighth day. The operation for the cleft palate is postponed until the twelfth or fifteenth month. His particular recommendation in this is to split the soft palate, rather than cut the nasal mucosa free from the posterior bony palate margin. Splitting preserves the blood supply as well as relieving tension.

In an article on the same subject, George V. I. Brown (Milwaukee) cautions against making the lip too long. Such a lip tends to grow worse, and is harder to correct than too short a lip. He also cautions against injuring the developing tooth germs, with consequent per-

manent injury to later symmetrical growth.

V. P. Blair (St. Louis) prefers to operate on hare-lip during the first twenty-four hours of life. The danger of shock appears to be the least at this time. Truman W. Brophy (Chicago) insists that the anterior arch should be approximated at the time of operation, and claims that the doctrine that the sutured lip does this is unsound. He finds that the muscular action of the lip on the jaw bony parts is a swinging one in which the anterior portions are brought together but the posterior tuberosities are swung apart making posterior and soft palate closure that much harder. In another article, he reports a mid-line cleft of the palate, a rare condition.

In adult cheiloplasty, V. H. Kazanjian (Boston) tells of conclusions gained from his extensive army experience. Though war conditions are not now present, more opportunities for selection and rejection of methods which might be applicable to civil life offered than could otherwise come to any man in a lifetime. A few pertinent sentences follow. "Whereas the closing of simple tears or lacerations not involving bony injury and the preliminary suturing of radiating wounds is often helpful, no serious plastic operation ought to be attempted before sepsis is controlled and the maximum vascularity of the tissues is obtained. Scars not only injure cosmetic results but seriously affect the blood supply of the operative field. It is often necessary to excise such scars to have healthy tissue approximated, and then wait for this to heal before the main operation is attempted. I cannot too strongly emphasize the utter futility of attempting the reconstruction of the soft tissues until either the underlying supporting structures have been put into proper relation with each other and with the face as a whole, or else adequate mechanical appliances accurately reproducing the lost bony tissue have been substituted. The plastic reconstructing flap may be taken from neighboring or remote tissues, preferably the former. There is a great temptation to approximate the borders of the wound, instead of making flaps, but results do not justify this method for more than slight injuries."

Benign Mandibular Tumors: The *Journal A. M. A.* of Dec. 10, 1921, gives four articles on tumors of the jaw. R. J. Wenker (Milwaukee) and G. M. Dorrance (Philadelphia) agree with the Malassez theory as to the etiology of dentigerous cysts. They start with epithelial cell rests and in a chonic process proceed through the three stages of the death of the tooth pulp, development of a granuloma, and the elaboration of bacterial or other toxins. Joseph A. Pettit (Portland) considers the cause of most oral tumors to be traumatic or bacterial. In comparison with benign tumors, malignant tumors of this region are relatively infrequent. The operative approach is preferably through the mouth. A careful removal of all epithelial cells is sought. Preference is against closing the wound on account of the probability of retained infection. Bloodgood's advice to use the cautery for the removal of these non-malignant tumors is deplored. Dorrance calls attention to the fact that the most frequent site of occurrence is at the junction of the premaxillary and lateral processes of either the upper or lower jaw.

Miscellaneous: Gilbert Chubb (*Brit. Med. Jour.*, Jan. 8, 1921) offers an ingenious method for the cure of salivary fistula. Carefully dissecting the fistula free, together with a small button of skin, he draws this button through an incision through the cheek and sutures it to the buccal surface. The fistula then empties into the mouth as is desired.

F. S. Hopkins reports a case of calculus in the submaxillary gland. He was able to find only twenty cases in the literature. Most authors recommend the external approach, but he reached the calculus through the floor of the mouth and thinks this method preferable.

E. G. Slesinger reports an infected submaxillary gland in an infant four days old. On pressure, brown semipurulent fluid escaped from Wharton's duct. The patient's condition became so grave that a radical external removal of the infected gland became necessary, with an ultimate cure.

H. A. Potts (Chicago) discusses the grave risk many dentists take in the extensive removal of teeth which are covered with septic débris. Blair joins in deploring dental extraction under septic conditions and refers to twelve or more deaths from this cause coming under his personal observation.

Oral Bacteria: A. L. Bloomfield (Johns Hopkins) reports an exhaustive study of the flora of the normal mouth in six cases as a basic study of the bacteria of colds. The tests were made repeatedly, over a considerable period of time. One group of bacteria were always present: a non-hemolytic streptococcus and a gram-negative coccus. Many other organisms were recovered but their presence was found to be transient, usually disappearing in a few days. The conclusion arrived at was that the upper respiratory passages offer an unfavorable environment for foreign organisms.

J. C. Kirby (Boston) reports a case of cervical abscess the result of a phlebitis coming from a peritonsillar abscess. He thinks this phlebitis similar to those cases reported by Mosher, who found an analogy between an internal jugular phlebitis of tonsillar origin and a lateral sinus thrombosis of mastoid origin.

Stammering: E. Tompkins says that stammering is brought on by accident and is continued by fear. This fear of stammering must be

controlled before relief can be obtained. Smiley Blanton (University of Wisconsin) has been able to shed further light on stuttering by the study of fifty-two war neurosis cases of this type. He concludes that "disorders of speech are due to the lack of ability to adapt oneself emotionally to social situations, or to a faulty motor mechanism, either hereditary or acquired." Curative measures aim at (1) the underlying cause, (2) general hygiene and (3) muscle training. He urges that the medical profession interest itself more earnestly in these unfortunates.

RADIUM AND X-RAY IN MALIGNANT TUMORS.

With the more general introduction of the use of radium as a therapeutic and post-operative healing measure, many writers are reporting operative cures where they had previously failed, while others find that too much enthusiasm has led to disappointment. There is disagreement as to its efficacy in laryngeal and esophageal cancer; all seem to agree on its usefulness in cancer of the accessory sinuses, but only in conjunction with radical surgery.

Under the title, "A, B, C of Radium," E. M. Deland (Boston) gives a general survey of radium and its uses. He notes that it takes two hundred tons of carmotite to make one gram of radium. At the Huntington Hospital, the use of emanations instead of the actual radium was first conceived and carried out and is still preferred. He finds that cancer of the esophagus does poorly under radium. There is, first, a swelling which blocks the passage of food, and later, a sloughing which may be dangerous. Cancer of the larynx has responded well at first, but the effects are not permanent; and the cartilage is easily injured, setting up at times a severe and untractable perichondritis. In sarcoma cases, the small-celled type yield best to radium, while the spindle-celled sarcoma does not respond as well.

H. H. Forbes (New York) reports a series of thirty-six non-operative neoplasms treated by radium. He quotes Dr. Willis, who has charge of the radium at the Post-Graduate Hospital, as saying that, as far as dosage is concerned, the application of radium and the utilization of the beta or gamma rays is still in the experimental stage. Nor have they concluded whether the radium or its emanations give better results. The introduction of the radium needle into infected tissues has caused abscesses which an application of radium to the surface avoids.

W. Freudenthal (New York) reports a case of lympho-sarcoma of the tonsil in a man of fifty, which was removed with a snare and then treated with radium. There was no recurrence in thirty-four months. He also had two cases of epithelioma of the larynx which he removed and treated intralaryngeally with radium. One died and one was cured.

D. C. Greene (Boston) reports a series up to June, 1920, where the larynx was involved in 37 and the upper jaw in 15. Radium was used in all. He concludes that radium should be used as an adjunct to the operation; it has supplementary, not primary value, though radium alone helps in extensive inoperable cases. In early cancer of the larynx, thyrotomy promises better; radium destroys cartilage.

W. L. Culbert (New York) says, "In malignant growths of the mucous membranes, especially of the nose and larynx, the efficacy of radium has yet to be proved. In my experience, better results have been obtained with the surface application of the radium element or emanation than by imbedding needle containers, the insertion of which frequently produces an over-amount of necrosis likely to lead to the formation of abscess."

H. A. Barnes (Boston) discusses the combined operative and radium treatment of malignant disease in the accessory nasal sinuses. He thinks the difficulty of early diagnosis and the irrational bloc removal of the superior maxilla which has heretofore been in vogue, or the more recent direct removal of the involved area which necessarily contaminates healthy tissue, are contributing causes in so many failures experienced. With the detailed operative procedures now possible by reason of greater familiarity with the anatomy, and with the immediate use of radium after the operation, results are now forthcoming that have not been possible. He recommends the Moure incision and the operative entrance directly through the face. A post-nasal plug and the use of the Rocci tube for ether keeps the blood out of the pharynx. All involved tissue is removed and an effort made to get into healthy tissue. The wound is kept permanently open by the removal of the V-shaped flap of Moure incision. The proper dosage of radium emanations is now inserted into the cavity with the packing, and remains in place about two weeks, being re-inserted with each dressing. Three or four subsequent radium treatments are given at weekly intervals, and repeated later at any suggestion of recurrence. One is cautioned against a radium dosage which will produce any marked reaction. A destructive action is not desired. It may cause a painful slough, and even dangerous bony necrosis. Eight cases are given, seven of which were of the advanced type, involving the ethmoids and sphenoid, long standing and apparently hopeless cases. Fifty per cent. were living and showed no recurrence.

G. B. New (Mayo Clinic) reports malignant tumors of the antrum treated by cautery from a soldering-iron, followed by radium. Of these, ten are well, with no recurrences, over a period of from eight to twenty-eight months; three had

been lost track of, two had recurrences, and three were dead.

R. C. Lynch (New Orleans) reports nine cases of laryngeal cancer operated upon perorally by suspension, with six cures, two recurrences which were cured by laryngectomy, and one death. Radium was not used in these.

The use of x-ray in the post-operative treatment of these malignant forms has been helpful, particularly in preventing lymph metastasis, but it has been impossible to apply as strong a dose direct to the part as can be done with radium, because of the danger of burning the skin. Recent work has not yet concluded points to the successful screening of the burning rays in x-ray. If this can be done, the therapeutic rays can be given in very much heavier doses and with correspondingly greater success.

The x-ray is also used in control of infectious processes. H. A. Osgood (Boston) discusses its use for the control of hypertrophied diseased tonsils. Three or four treatments are given at intervals of two to three weeks. Atrophy results in from six to nine weeks, with a decrease in size to one-quarter the original. The action is only on the lymphoid tissue, not on the tonsillar infection. The shrinking of lymphoid tissues encourages the opening of the crypts and their drainage. This procedure offers no danger in expert hands. The dose is carefully controlled, and neighboring parts are screened. One must wait for results, and not proceed with more x-ray treatment if a shrinking of tonsil tissue does not immediately follow. The compensatory hypertrophy of Waldeyer's ring, frequently seen after an adenotonsillectomy, does not appear.*

The high-frequency current is advocated by Stewart for the removal of tonsils. F. H. Williams (Boston) uses radium for reducing tonsil hypertrophy and disease. Fifty milligrams is filtered through aluminum and held in a retainer near or against the tissue. Diathermy is also recommended for the removal of tumor masses. The tissue is painted with iodine and the high-frequency current is applied, up to two amperes. A large current through a small electrode generates heat. The tumor is coagulated *in situ*. If destruction has not gone deep enough, remove the slough and repeat.

*From evidence at hand up to the present time, it seems very improbable that the x-ray will supplant surgery in the treatment of diseased tonsils.—Ed.

Book Reviews.

Diseases of the Chest and the Principles of Physical Diagnosis. By George W. Norris, M.D., Assistant Professor of Medicine in the University of Pennsylvania, and Henry R. M. Landis, M.D., Assistant Professor of Medicine in the University of Pennsylvania; with a chapter on Electrocardiograph in Heart Disease, by Edward Krumbhaar, Ph.D., M.D., Assistant Professor in Research Medicine in the University of Pennsylvania; Second edition; thoroughly revised. Octavo volume of 844 pages, with 433 illustrations. Philadelphia and London: W. B. Saunders Company. 1920.

The fact that this is the second edition, with the first edition exhausted in less than two years, demonstrates that this book has filled a need and has been accepted by the profession. Even a cursory examination shows that this acceptance was justified and that the second edition should be even more popular.

The study of the literature of the world-wide epidemic of influenza in 1918-19 is not yet completed, but the authors have summarized well the results up to the time their manuscripts were sent to the press. A future edition will doubtless change some of their conclusions.

Mycotic infections of the lungs, about which there is an increasing literature, have been summarized by Dr. Landis, who, however, does not accord them the importance that some of the writers on these subjects have assigned them. Nevertheless, they must be kept in mind by the general practitioner who is called on to diagnose incipient pulmonary troubles.

In cardiac diseases, the causal classification advocated by Cabot is not found by the authors adequate to cover all the manifestations of these disorders. The authors, therefore, keep the reader's attention focused on the anatomic changes.

As the title would indicate, the authors do not discuss more than inferentially the treatment of the diseases studied.

The illustrations are excellent, both because they elucidate the text and because they are of themselves instructive. The physician will find them useful for frequent reference, especially those showing hardened sections of the lungs and the topography of the chest.

Sexual Impotence. By Victor G. Vecki, M.D., San Francisco, Cal. Sixth edition. 12mo of 424 pages. Philadelphia and London: W. B. Saunders Co.

This may be said to be strictly a medical book of use to the physician and to the surgeon. The subject is one which has been grossly neglected by the profession and exploited by the charlatan. This is all the more reason why legitimate medicine, and particularly the general practi-

tioner, who comes in close contact with his patients, should give it serious consideration. About one-fourth of the text is devoted to prophylaxis and treatment, the technique of which is well within the scope of all.

Orthopedic and Reconstruction Surgery. By FRED ALBEE, A.B., M.D., Sc.D., F.A.C.S., Lieutenant-Colonel M.C., U.S.A., 804 illustrations. Philadelphia and London: W. B. Saunders Company.

This splendid work of more than 1100 pages so fully includes the whole subject of Orthopedics in original discussion as to leave no need for other literature on such matter. Besides elaborate presentation of pathology and diagnosis, the treatment is given from every angle and all aids fully presented. Much discussion is given to the lessons taught in the late war, and the 800 illustrations fully illuminate the subject. Though the book is the product of one of the highest authorities on the surgery of Orthopedics, it contains a long list of references to other papers and reports on the subject. This book is of inestimable value in its clearness and completeness.

A Form of Record for Hospital Social Work (including suggestions on organization and typical record forms). By GERTRUDE L. FARMER, Director, Department of Social Work of the Boston City Hospital, Boston, Mass.

Miss Farmer, in this book, has pointed a way in which lack of uniformity of records in medical social case work can be overcome, not only among different departments of different hospitals, but even among the departments of the same hospital.

As a whole, the book presents in a concise form the material which is essential if one wishes to know how and why records are made and how they may be kept. For those who know about hospital social work and for those who should realize its importance, social workers, doctors and hospital executives, this book will show clearly the various steps taken in working out a medical social history and the careful recording of the same. It gives valuable suggestions as to how uniform records can be kept, whether dealing with patients needing "short service" or intensive social case work.

As Mrs. Ada E. Sheffield says in the introduction, "An important part of the plan Miss Farmer advocates is the regular and skilled supervision she recommends, which really amounts to a continuous training in the essentials of case work itself, thus the record is treated as the workers' thinking objectified."

Clinical Electrocardiography. By FREDERICK A. WILLIUS, of the Mayo Clinic. W. B. Saunders Co. 1922. pp. 188.

In this small volume, Dr. Willius has attempted to cover the subject of electrocardiography in its theoretical and practical aspects. An account is given in the early pages of the more important physiological considerations concerning the heart, which enables the reader to more clearly understand what follows. The simple details of mechanically obtaining the electrocardiograms are also described, and later, the interpretation of the curves is discussed.

The author was quite presumptuous in compressing into one small volume a survey of both the theoretical and practical sides of such a complicated and as yet only meagerly understood subject as clinical electrocardiography. There are numerous errors, both clinical and theoretical in nature. For example, in Figure 54, the a-v rhythm is not 3 to 1 as the author states, but rather an irregular degree of block; also Figures 76 and 77 are misleading, for the former is described as being a 2 to 1 heart block, while from the very tracing it is much more likely a 3 to 1 block; and both are instances of auricular flutter in which condition there is practically always some heart block. It would have been much clearer to show a 2 to 1 heart block in which the auricles were contracting normally. These errors indicate a looseness in the discussion of the subject which is harmful.

The author also states that paroxysmal tachycardia "does not attain a rate of 200 per minute." I have personally seen several instances in which the rates were 220, 240 and even 250 (such cases are recorded in the literature). He also attaches too much importance to the actual auricular rate in distinguishing auricular flutter from tachycardia, and fails to emphasize the importance of the characteristic form of the flutter waves, which is a sharp up and blunter down stroke.

It is of very questionable value to give possible clinical interpretations and pathological causes (as the author does in the chapters on the "T" wave and Q-R-S complex) of changes in the electrocardiogram that are as yet poorly understood. The fact that 24 per cent. of 197 cardiac patients who showed slurring of the Q-R-S group were dead in 4½ years, really tells us very little, for it is highly probable that 24 per cent. of unselected cases entering the wards of any large hospital are dead in 4½ years, no matter what the electrocardiograms show.

I can hardly recommend this volume, the publication of which seems to be premature and likely to cause confusion; especially as there are available in the English and American med-

ical literature treatises that for the present cover this field satisfactorily.

Protein Therapy and Nonspecific Resistance. By WILLIAM F. PETERSEN, M.D., Chicago. New York: The Macmillan Company. 1922.

In the present day, the use of vaccines, serums, boiled milk, and such biuret reacting substances as the proteoses, is being more and more employed in the treatment of chronic diseases, such as arthritis and to a somewhat less extent in the treatment of acute infections, such as pneumonia and typhoid fever.

In spite of an enormous literature on the subject, the indications for this form of treatment, the mechanism of its effect, as well as the mechanism of the reactions which often follow, are today little understood—so that the treatment is always attended with more or less risk and uncertainty. On the other hand, it is becoming generally recognized that nonspecific protein therapy does, in certain cases, do good, either by quite suddenly aborting the disease or by shortening its course and lessening its severity.

It is particularly fitting that such a qualified student and impartial scientific observer as Dr. Petersen should compile such a careful review of the literature and write such a comprehensive discussion of the subject at this time.

The text of the book occupies 256 pages, and is followed by a bibliography of 50 pages. The review of the literature is excellent and complete. The theories and the probable mechanism of the reaction following the injection (intravenous) of nonspecific protein substances are discussed both from the point of view of the antibodies concerned and from the point of view of ferments and enzymes. The application of these theories to various infections is brought out. It is interesting to see considerable emphasis laid on the focal reaction and its importance.

The last 114 pages of the text deal with the application of nonspecific treatment to many diseases. Here again, the literature is carefully reviewed and discussions of the special mechanisms are added, which lead to an exposition of the various indications and especially to the contraindications to this form of treatment.

The last paragraph of the introduction, written by Dr. John L. Miller, may well be quoted:

"To all those interested in the treatment of infections—and this includes both physicians and immunologists—this book will be most welcome, presenting as it does in a comprehensive manner, a complete analytical review of the subject, which will be of assistance in furnishing a basis for further carefully controlled studies."

Infant Feeding. By CLIFFORD G. GRULEE, Associate Professor and Acting Head, Department of Pediatrics, Rush Medical College. Fourth edition; revised. W. B. Saunders Co.

The fourth edition of this well-known book has been enlarged by adding an extra chapter, "The Psychology of Infant Feeding," and has been generally brought up to date. This book was the first American book on infant feeding to detail the teachings of Finkelstein, and the fact that it has gone through four editions and several extra printings since 1912 attests its popularity.

In the main, it is well written; Dr. Grulee is conservative in his statements, and has a wide knowledge of the literature. The first 99 pages are devoted to a discussion of the scientific bases of infant feeding, such as the anatomy and physiology of the digestive tract, the metabolism of the food, etc. In the Reviewer's opinion, this is not well done; a great deal of ground is covered, it is true, but much unnecessary and uninteresting information is included, and these pages seem too much like a jumble of isolated facts, some relevant, some irrelevant, set down without any attempt, for the most part, to show their practical value or to offer an interpretation of them in terms of every-day practice. To the average reader, the first 100 pages will be a bore, and it will be difficult for him to see what blood creatinin, blood amino-acid or the cultural characteristics of the colon bacillus have to do with his practical, every-day problems of infant feeding. In short, the section on metabolism covers a good deal of ground; it is thorough but, in the opinion of the Reviewer, has not been brought into close enough touch with practice to make it readable or valuable. Of course, such a union is always difficult.

The chapters on "Breast Feeding" are excellent, especially that on "Nutritional Disturbances in the Breast-Fed," which will be a real help to anyone. In it the author has drawn mostly from his own wide experience rather than from the literature. His discussion of colic, on pages 151 and 152, is one of the best things on the subject in English. The chapter on the "Foods Used in Artificial Feeding" is rather superficial and uninteresting; anyone who has used it would not agree with the author that dried milk has little place in infant feeding.

The chapter on "The Artificial Feeding of the Normal Infant" is done well, but the Reviewer cannot but feel that if anyone has solely at his command whole milk dilutions, such as Dr. Grulee recommends, he will often be at sea.

It is a pleasure to read, on page 208, Dr. Grulee's condemnation of feeding vegetables to

young babies, and we heartily wish that he would continue spreading this gospel throughout the Middle West. He begins vegetables at 15 months, which is conservative, safe and sensible. He has devoted only three-fourths of a page to the feeding of children during the second year. The subject deserves more space. The chapters on "Digestive and Nutritional Disturbances in the Artificially Fed" are well written and give an excellent idea of modern German methods. That on "Fat Disturbance" is particularly good. Dr. Grulee has apparently grouped all the so-called "Summer Diarrheas" under the heading of "Intoxication." The Reviewer cannot agree with him in this, and wonders that he does not more cleverly differentiate infectious and fermentative diarrheas.

The chapters on "Rickets and Scurvy" are rather superfluous; it would have been better either to leave these subjects out entirely or to treat them more fully. The closing chapter on the "Psychology of Infant Feeding" is excellent, and it was a happy thought to include it.

This book is constructed in a scholarly way; it is scientific and complete, for the most part; one might wish, however, that the author had effected a somewhat closer union between science and practice and had been able to make the first part of the book a little more *alive*. This first part resembles too much a catalogue. In the main, it is a good book, and will be a real help to many people, especially those who believe in German methods, while others will not care for it. It is not possible to write a book on infant feeding which will please everybody; there is too much difference of opinion in different sections of the country.

A Laboratory Manual for Comparative Vertebrate Anatomy. By LIBBIE H. HYMAN. Chicago: University of Chicago Press. 1922.

This monograph from the Department of Zoology of the University of Chicago, aims to provide a manual of vertebrate anatomy suitable for the comparative plan of laboratory teaching there introduced. A brief account of the development and evolution of each system is given in connection with the directions for its dissection. The series of animals selected consists of the elasmobranch, skate or dogfish, necturus, turtle, pigeon, cat, or rabbit. The text is well illustrated with a series of 69 figures. A classicist would criticize adversely the use of *plexi* as a plural. As a whole, the book commends itself highly, and should be found valuable in the college teaching of vertebrate zoölogy.

An Introduction to Dermatology. By NORMAN WALKER, LL.D., M.D., F.R.C.P.; Physician for Diseases of the Skin, the Royal Infirmary, Edinburgh. Seventh Edition; with 84 plates and 80 illustrations in the text. New York: William Wood & Company. 1922.

In the preface to the first edition of this book, in 1899, the author stated that his aim has been to describe fully all the more common diseases such as the ordinary practitioner is likely to meet with, and to omit the rare conditions which chiefly concern the specialist. In this, the seventh edition, the temptation to enlarge the scope of the Introduction has been resisted, and the characteristics to which its success has apparently been due have been preserved. Newer methods have not been dealt with so fully as some might wish, not from any hostility to them, but because they should still be considered the property of the experts before attaining a position which justifies passing them over to the general student.

An Index of Treatment. By Various Writers. Edited by ROBERT HUTCHISON, M.D., F.R.C.P., Physician to the London Hospital, and JAMES SHERREN, C.B.E., F.R.C.S., Surgeon to the London Hospital. Revised by WARREN COLEMAN, M.D., Assistant Professor of Medicine, University and Bellevue Hospital Medical College.

This is, as the title page defines, only an index of treatment and a compilation of the opinions of one hundred British surgeons and physicians. For the general practitioner, this book would furnish suggestive general information on a great variety of conditions often encountered.

The first part of the book is devoted to the general principles of therapeutics. The following pages deal with medical and surgical problems in a concise but very limited way. A busy man who wanted to refresh his memory could find reference to many disorders and surgical conditions, but the well-qualified physician would be disappointed in the failure to find much help in dealing with the more important features of pathology and diagnosis. The articles assume that the reader is able to diagnose the diseases referred to and it is probable that good diagnosticians have a working knowledge of treatment.

Although the book is well gotten up, and there is nothing to criticise in its mechanical details, it is doubtful whether a synopsis of medicine and surgery adds much to the literature of the present time, although some practitioners may need, in one volume, more than can be found in a modern medical dictionary.

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OPPOSITION TO THE SCHICK TEST IN WORCESTER.

MRS. JESSICA HENDERSON, spoken of as an officer of The Medical Liberty League, in a Worcester paper, is organizing a movement designed to enlist the mothers of pupils in the Worcester schools in opposition to the use of the Schick test. A protest was filed with the school committee. The Worcester Board of Health had previously voted to ask for the cooperation of the school officials and had arranged to apply the test only to those children whose parents or guardians had applied for it. Mrs. Henderson is quoted as having said that there was no occasion for the use of this test in Worcester because there were only fourteen deaths from diphtheria and croup in 1920, and that the use of the test was not devoid of danger, and claimed that seventy cases are on record where children suffered injury or death from toxin treatment.

It is to be hoped that everybody—Mrs. Henderson included—will read the Monthly Bulletin of the Department of Health of New York City for February, 1922. In this publication appears the most lucid and convincing array of facts and opinions relating to the Schick test, written by William H. Park, M.D., the Director of the Bureau of Laboratories.

The points brought out by Dr. Park are that however wonderful are the results of antitoxin treatment of diphtheria, this disease can never be conquered by this method alone. "The combination of the ever-present carrier of bacilli and the slowness of people to recognize diphtheria when it develops, still permits the occurrence of fifty per cent. as much diphtheria as we would otherwise have, and perhaps one-sixth of the number of deaths." During the past five years diphtheria mortality and morbidity have not decreased to any appreciable extent. The hope for the future lies in toxin injections or bacterial vaccines. Von Behring made a great contribution to available knowledge in his demonstration of the safety of the injections of toxin-antitoxin about 1913, but not having the Schick test, the immunity developed so slowly that many exposed children were not brought to the stage of safety early enough to avoid the development of diphtheria.

The harmlessness of the toxin-antitoxin injections was demonstrated in New York late in 1913, and it was shown that after these injections about 80 per cent. of those possessing insufficient antitoxin developed immunity. Observations have been made of some ten thousand children over a period of from three to six years. *There have been no serious immediate or late after-effects.* No diphtheria has developed among children who have received these injections. After these injections of toxin-antitoxin about 80 per cent. of the children retain evidence of immunity for at least six years. With the few who partially fail to respond, after a second treatment it is found that immunity is established. Even if it shall be found that the immunity conferred is not permanent it is only necessary to repeat the treatment whenever it is demonstrated that immunity has disappeared. It has been found that the great majority of children who have natural immunity, retain this immunity for a period of five years at least. It is very interesting to note that those children that do not react to the Schick test do not seem to be susceptible to diphtheria.

In the circular to parents distributed by the Department of Health of the City of New York, one part is especially impressive, as follows:

"A WONDERFUL DISCOVERY.

"It should, therefore, be a source of joy to parents to learn that as a result of a recent discovery by Dr. Schick, it is now possible to say with certainty that diphtheria can be prevented and that not many years hence there will probably be as little diphtheria as there is smallpox now.

"This discovery consists of two parts:

"1. A method of finding out whether a child (or grown-up) is liable to get diphtheria or not.

"2. A method of preventing those who are susceptible to diphtheria from ever catching the disease."

Mrs. Henderson's activity illustrates a sad tendency to discredit scientific medicine. If her purpose was to array herself against society with a vicious ambition to destroy good government, she could be dealt with effectively, but unfortunately she appears to be a morally honest, although self-deceived, person who is trying to protect society against evils which she thinks are inherent in medical practice. The danger is not to herself but to the large number of persons who have suspicious temperaments and who are easily influenced. She is unconsciously aiding and abetting those agencies which burden society and cause death. Every age has produced fanatics, and Mrs. Henderson is an example of these unbalanced people. If she had a logical and honest intellect she would devote the resources at her command to employing trained workers who could investigate this and kindred subjects and render opinions of scientific value, rather than assume that the consensus of opinion as put forward by many scientists is fundamentally wrong.

An objector who is willing to argue from facts is entitled to a hearing, but one who becomes almost infuriated in argument and ignores logic, may be compared to that animal which reacts violently to a certain color scheme.

THE INSTITUTE FOR NURSES.

AN attendance of some two hundred and fifty of the health workers of Greater Boston at the Institute for Nurses, on March 28, testifies to the success of this venture of the Boston Tuberculosis Association, which follows a like success last fall at the Institute for Physicians. Both of these occasions were efforts to present to special workers the latest information with reference to tuberculosis. The Institute for Nurses was held at the Medical Library through the courtesy of the Massachusetts Medical Society. The two occasions were quite different in that the first addressed itself to practitioners and sought to bring them into touch with the latest developments in methods of diagnosis and treatment. The Institute for Nurses sought to make these visitors to the home an instrument more powerful than they now are in the discovery of incipient cases of the malady. The speakers at both institutes were of the highest character. For the physicians, such authorities as Dr. Miller, Dr. Brown and a dozen specialists of Boston, and for the Institute for Nurses the speakers included the Health Commissioner of New York State, the President of the Boston Tuberculosis Association, the Director of the Division of Tuberculosis in Massachusetts, with three women, leaders in their departments, presenting the results of practical experience for the benefit of other workers in the various fields. Institutes of this character cannot fail to be of highest value in the warfare on disease, and of especial importance here is the public health nurse, who has the advantage of entry into the home and acquaintance with the family. She has an opportunity to be a powerful agent in that great force, health education of the people, and it is fitting that efforts like this institute be made to put her into touch with the most recent knowledge.

Below are abstracts of the papers presented.

The presence of Dr. Hermann M. Biggs, Health Commissioner of the State of New York, made of the sessions of the Institute for Nurses of the Boston Tuberculosis Association, on March 28, an occasion of more than State-wide interest and profit. His presentation of the general subject of the place of the nurse in public health work was that of a man with extended view, who has been able to effect in his own State a development of the public health nurse that is at once remarkable and valuable.

In his initial phrases Dr. Biggs complimented Boston and Massachusetts because of their early and energetic work in tuberculosis, and claimed only to present conditions in another State. He dwelt on the history of anti-tuberculosis regulation in New York, noting how the early measures (1887-1888) were not supported by the physicians of the day. It was with some opposition that there were established the fundamental requirements of a broad educational campaign, reporting of cases of tuberculosis, examination of sputum, visitation of patients in their homes, and terminal disinfection or cleansing. These, however, have come to be established practices today. He spoke particularly concerning the lack of beds for tuberculous patients in early days, noting that the entire special equipment was one small hospital in Brooklyn of about one hundred beds. At the same time the regular medical wards of the hospitals were occupied to the extent of one-third or one-half by such cases. These cases were usually advanced or dying, for they seldom came in till very late.

Outlining the conditions of those times, the speaker noted that no precautions were taken as to disposal of the sputum, ventilation was bad, and it was quite common for nurses and hospital assistants to contract the disease.

Living conditions were unfortunate, with much overcrowding and little ventilation, and advanced cases remained in the tenements till the end. Under such conditions the mortality

rate from tuberculosis was 360 per hundred thousand of population. Here Dr. Biggs compared the decline in the rate of New York State with that of Massachusetts, showing how they were almost identical. The rate for the Borough of Manhattan for last year was about 100 per one hundred thousand, less than one-third of its earlier figure. This improvement has been brought about by a large number of factors: improved housing, bettered sanitary conditions in the city, widespread public health education, greater intelligence of the people, improvement in living conditions and decrease in alcoholism. A very important factor has been the removal from their homes of a large percentage of the advanced cases of consumption. A good deal of detail was entered into in bringing the story of older days down to the present, one striking fact being that the foci of intense infection in New York today are only about one-fifth to one-seventh of what they were twenty-five years ago. Incidentally the decline in the infant mortality was noted, this figure having dropped from 250 per thousand births to 82 in the year 1921.

Dr. Biggs referred to the public health nurse as being one of the most important factors in the accomplishment of what has been done. It is well to take cases of communicable disease out of their environment, but in the final analysis the largest results are to be obtained from the carrying of the lesson, the public health lesson, the lesson in personal hygiene, to the family and the individual, "and," said Dr. Biggs, "it is the public health nurse who is the most important, the most effective agent in the work. We have felt this very strongly in New York State, and have been using every effort in these last five years to increase the number of workers in the field."

The speaker next referred to the training of nurses and noted that there is a problem in this, how to qualify nurses already in the field for educational work, and how to better prepare those in course of training.

Dr. Biggs referred to the fact that the State has beds enough now for the needs, but they are not properly distributed, and on January 1 there were 1500 empty beds in New York City. He sketched rapidly the situation of tuberculosis work in the State, referring especially to the consultation clinics, of which there were perhaps 200 to 300 last year. Every county tuberculosis hospital has at least one nurse who seeks out the cases of this disease, keeps in touch with them and strives to get them to hospitals or clinics. At these clinics more than 8,000 persons were examined last year, and about 30 per cent. found to be positive. The work at present centres largely about the county organizations.

In closing, Dr. Biggs referred to the motto proposed by him for the New York City Health Department, "Public health is purchasable. Within natural limitations any community can determine its own death rate."

Dr. John B. Hawes, 2d, President of the Boston Tuberculosis Association, presented the first paper, which discussed general conditions in tuberculosis. The speaker emphasized the fact that tuberculosis is not hereditary, that it is passed from one to another chiefly through ignorance of certain fundamental laws. The economic burden is an important one, costing the country some $300,000,000 a year, without counting the disability of individuals or discomfort and unhappiness. The speaker pointed out the difference between infection and actual diseased condition, and noted that tuberculosis infection is well-nigh universal in human beings leading the civilized life by the time they reach the age of fifteen or sixteen.

Dr. Hawes addressed himself particularly to the nursing profession, uttering a word of warning against diagnosis of disease, the province of the nurse being to lead the person to some medical authority. The important feature of the work of the nurse lies in the opportunities for observation, especially with children, and in the homes and in industrial work there is opportunity to note possible contacts and get the individuals properly guarded or treated. There is no danger to be feared by the nurse of contracting tuberculosis.

Miss Mary E. Edgcomb, Supervisor of Tuberculosis Work with the Providence (R. I.) District Nursing Association, spoke historically of the beginnings of "follow-up" work. In 1900 an experiment at the Johns Hopkins Hospital proved the foundation stone of the present structure. The necessity of the follow-up has changed the character of the work, and from care of the advanced patient it has assumed more the phases of prevention and education. The care of the patient in the home is the cornerstone on which all successful tuberculosis work must be built.

The paper of Miss Mary Murray was of especial interest in Boston, since it was largely a story of the Lakeside Preventorium of the Providence Tuberculosis League, of which she has charge. The Lakeside camp was opened in 1907 and for a number of years it was a day camp, permanent buildings being gradually erected. Since 1913 it has been open throughout the year, and for five months the children—it is a preventorium for children—are all the time in the open air. The story was valuable for the facts that it presented with reference to the administration of such institutions. The results were particularly satisfactory. Of a group of 88 children, 15 were on entering from 20 to 30 per cent. under weight; 43 were 10 to 20 per cent. under weight and 17 were 10 per cent. or less under weight.

All of the first group and all of the last one made up their weight while at Lakeside, while of the 43 in the second group, 39 made up the deficiency before discharge.

Of especial value, since it was a recital of actual experience, was the paper of Miss Margaret G. Weir, Executive Secretary of Public Health Dispensary Commission of the city of Beverly. Many details of a carefully considered policy which should secure the coöperation of various agencies were sketched. The speaker emphasized a number of points: that the greatest problem lies in the discovery of the cases and placing the individuals under proper care; that because the disease embraces medical, social, economic and industrial problems, its control should be in the hands of trained men and women, and that the public health nurse has the opportunity to direct her work into preventive and constructive lines.

The tuberculosis programme in Massachusetts was briefly outlined by Dr. Sumner Remich, Director of Division of Tuberculosis, Department of Public Health, and Dr. Eugene R. Kelley, State Health Commissioner, spoke extemporaneously with reference to the empty bed problem. Such surveys as that at Framingham would indicate that there are many who ought to be in those beds, probably quite as many as there are empty beds. "It is a challenge to a group like this," said Dr. Kelley, in addressing the assembled nurses, "to feel the necessity of follow-up work and really know where the patients are."

Following the Institute was a social hour. The committee in charge of it included Miss Bernice W. Billings, Executive Secretary of the Association, and Miss Zepha M. Gardner, Superintendent of Nurses, Boston Sanatorium Outpatient Department.

TROPICAL MEDICINE.

HERETOFORE we have published no reviews from the journals on tropical medicine, but it is now proposed to add several of the leading journals in this field to the list of publications for review.

The American Journal of Tropical Medicine is the official organ of the American Society of Tropical Medicine. The current number of this journal, Volume II, No. 1, January, 1922, contains several articles of unusual interest.

Dr. John M. Swan, in his presidential address to the Society at its last meeting, describes the rapidly growing work in our Southern States for the prevention of malaria. He emphasizes the point made by Gray "that it is cheaper to control malaria than to suffer for it," and expresses his belief that we may look forward to the time when malaria will be controlled throughout the continental United States. Further, he says that in Central America, the West Indies and in the tropical parts of South America, sanitary problems must be solved before commercial, agricultural, engineering and mining enterprises can succeed, and proposes that the United States should endeavor to help in this field, not in the sense of exploitation but of constructive coöperation. To this end Dr. Swan urges the establishment in the United States of an institute which should serve not only as a clearing house for problems of the tropics, but which should also instruct physicians and nurses to meet the needs of the tropics.

The first three papers in the current number of *The American Journal of Tropical Medicine* are by N. T. McLean, by Reynolds Hayden and by O. J. Mink. Public health problems in the Republic of Haiti, in the Dominican Republic, and in the Virgin Islands are dealt with by the authors respectively. All are officers of the United States Navy who have been engaged in the administration of the work described and who consequently are able to supply interesting first-hand information.

Callender contributes an article about the Army Medical Museum in Washington in which he says that the Museum hopes, in coöperation with other museums and pathological departments, to inaugurate an exchange system for mutual benefit. The Museum is glad to receive pathological specimens of all varieties. Opportunity is offered to physicians to study the collections and to consult the files. Microscopical and histological material and accommodation for the prosecution of extensive studies are available through application to the curator.

An article by Moise D. Levy describes a new method for the treatment of trichomonas infections, a condition which hitherto has proved refractory. Levy's method is simple, seems to have been efficacious in a few cases, and would seem to deserve further trial.

A. C. Stevenson, working at the Wellcome Bureau of Scientific Research, examined the kidneys of 100 wild rats for Leptospira icterohemorrhagiae, the organism of infectious jaundice. He found a high percentage of the rats were infected, although the disease is practically unknown in the area.

One prominent English journal and the leading French journal of tropical medicine will be abstracted. The journals selected are the *Annals of Tropical Medicine and Parasitology* and the *Bulletin de la Société de Pathologie Exotique*.

Now is the time to swat the early fly. One fly killed in the early spring means more effective control than hundreds in summer.

NEWS ITEMS.

Boston Board of Health.—During the week ending April 8, 1922, the number of deaths reported was 253 against 227 last year, with a rate of 17.21. There were 42 deaths under one year of age against 29 last year.

The number of cases of principal reportable diseases were: Diphtheria, 58; scarlet fever, 28; measles, 215; whooping-cough, 5; typhoid fever, 2; tuberculosis, 39.

Included in the above were the following cases of non-residents: Scarlet fever, 1; tuberculosis, 6.

Total deaths from these diseases were: Diphtheria, 2; measles, 1; tuberculosis, 17.

Included in the above were the following cases of non-residents: Tuberculosis, 2.

Encephalitis lethargica, 8 cases, 3 deaths. Of these, 5 cases were non-residents and 2 deaths were non-resident.

Dr. Neil A. Dayton, formerly of the Westboro State Hospital, has accepted the position of Senior Assistant Physician at the Wrentham State School, Wrentham, Mass., and assumed his new duties on April 4, 1922.

Dr. Elliott P. Joslin delivered an address before the New York Academy of Medicine, April 6, 1922. The title of his paper was "The Present Situation in the Treatment of Diabetes."

Worcester District Medical Society.—The regular meeting was held at 8.15 P.M., Wednesday, April 12th, at the Worcester State Hospital, Belmont Street. Program:

"State Medicine *vs.* Preventive Medicine," Dr. Eugene R. Kelley, Commissioner of Public Health, Boston; "Mental Health in Children," Dr. Walter E. Fernald, Waverley.

After the meeting lunch was served by members of the staff.

The Censors will meet in the Public Library at 4.15 P.M., Thursday, May 4th.

J. J. Goodwin, *Pres.*
A. W. Atwood, *Secy.*

The Worcester District Medical Society.—The regular clinical meeting of the Staff of the Worcester City Hospital was held March 31, 1922. The program was in charge of the Surgical House Officers and was as follows: "Puerperal Psychosis," Dr. W. E. Savage; "Gas Bacilius Infection," Dr. I. M. Webber; "Catharties," Dr. A. W. Locke.

Dr. E. A. Leavitt of Worcester, who has been critically ill at the City Hospital, with uraemia, is very much improved.

Dr. C. E. Mongan delivered an address before the New Hampshire Medical Society Tuesday, April 18, on "Some Aspects of Social Medicine."

Miscellany.

A TUBERCULOSIS STUDY IN BOSTON HOSPITAL OUT-PATIENT DEPARTMENTS.

Under the above title Dr. John B. Hawes, 2nd, and Bernice W. Billings, R. N., have made a survey with the following objects in view:

1. What happened to patients diagnosed as having pulmonary tuberculosis and other forms of tuberculous disease?

(a) Were they promptly reported to the Board of Health?

(b) Was sanatorium or other proper treatment promptly and efficiently instituted?

2. What happened to patients in whom a provisional diagnosis of tuberculosis was made?

(a) Did they report back for further examination, and if not, why?

(b) If not, what was done about it?

3. How efficiently and thoroughly was the examination of "contact cases" carried out? By "contact cases" is meant particularly those children living in families where there is an adult case of pulmonary tuberculosis.

4. How close supervision and follow-up work was carried on in regard to those patients living in their homes?

5. What duplication of effort existed among these various institutions?

There were 963 patients in the groups studied. The report shows that pulmonary tuberculosis is fairly well reported, but that only 46.8 per cent. of the non-pulmonary had been reported. An analysis of the diagnoses of these cases show that they were as correct as would be reasonably expected in a group of this sort. One especially weak point is brought out which is found in failure to generally examine contact cases.

The following recommendations are made:

1. While pulmonary tuberculosis is evidently promptly reported, this is not the case with non-pulmonary tuberculosis. We would recommend that measures be taken in all the institutions covered by this study to remedy this defect.

2. We would recommend that all patients who are given a provisional diagnosis or who are diagnosed as "provisional" in the out-patient departments be automatically referred to the social service department in the out-patient

department in which the patient is examined or referred to Boston Sanatorium, Out-Patient Department, for follow-up work, in order that reëxamination be made until the diagnosis is determined. With care the greater part of this entire group of "provisional diagnosis" could be eliminated.

3. We further urge the need of the establishment of contact clinics in the outlying sections of the city. It is very difficult, and likewise expensive, for mothers to bring large families of children into the center of the city, far from their homes, for examination. Undoubtedly many of these children would be examined if there were a nearby place to which they could be taken.

4. We believe that the Out-Patient Department of the Boston Sanatorium needs at least 16 additional nurses to follow up that important group of patients who are either arrested or improved cases of tuberculosis. Many of these patients would be enabled to become self-supporting and live for many years, providing they received more careful supervision in their homes.

5. The data secured from the Confidential Exchange showing that 372 of the 963 patients had been registered at this exchange, and that a large number of these patients were known to many medical and charitable associations would lead us to urge that all patients who are diagnosed as tuberculous in the out-patient departments, and who are given a provisional diagnosis in the out-patient departments, and who need follow-up work, should be automatically registered with this exchange by the social service departments. By this means duplication may be avoided.

The complete report can be obtained by applying to the Boston Tuberculosis Association, 3 Joy Street.

MEDICAL EDUCATION.

RADICAL changes in medical education must be made and made quickly, says Dr. S. S. Goldwater of Mt. Sinai Hospital, if the application of medical science is to continue to progress.

Dr. Goldwater makes a plea for changes in the medical curriculum which shall emphasize the study of the body from the standpoint of health rather than from that of disease. "The medical student," he says, "learns what a perfect human structure would be like, is taught that in health the human body behaves thus and so. If, at this point, one were free to ignore the traditions of the schools, one would be tempted next to direct the student to health conservation or preventive medicine. If the promotion of physical well-being is the aim of medicine, would it not seem to be logical after familiarizing the medical student with the healthy body, to show him how, during infancy, childhood, adolescence, maturity and old age, the vigor of the human body can best be maintained? Time would be well spent in the study of the dangers that threaten infancy, youth and age, in all the walks of life."

MASSACHUSETTS TUBERCULOSIS LEAGUE.

THE Executive Committee of the Massachusetts Tuberculosis League has voted to recommend that the organization incorporate. In order that this shall be done, a vote at the Annual Meeting to turn the matter over into the hands of a Committee on Incorporation must be taken. The following proposed changes in the constitution are to be brought before the Board of Directors for discussion and action at a meeting to be held at the Hotel Victoria, Thursday afternoon, April 20, 1922, at 3 o'clock. Any action taken at this meeting will be in the nature of recommendations to the Committee on Incorporation. When the new corporation is formed the entire present constitution must be abandoned and a new set of by-laws adopted in its stead.

Most of these changes are made necessary by a new set of standards established by the National Tuberculosis Association for its affiliated state organizations and also in anticipation of incorporation of the State League. Other recommendations than those embodied in this communication may be made at this meeting. The Executive Secretary, and Mr. Drinkwater, the Treasurer of the State League, who is acting as the attorney in incorporation proceedings, will be very glad to make any detailed explanation for the benefit of anyone who may wish further information than that contained in this communication.

PROPOSED CHANGES.

Article III—Membership. It is proposed to add a section to this article which will provide for "Corporate Members." The proposed article is as follows: "Corporate Members shall be limited to anti-tuberculosis and public health associations other than affiliated associations, sanatoria, business corporations, clubs, and welfare organizations, subject to the approval of the Executive Committee. The annual dues of Corporate Members shall be $10."

It is also proposed to amend the last sentence of the article so that all members shall be entitled to one vote at annual meetings. This change is required by the new standards of the National Association.

Article IV—Directorate. It is proposed to change this article so that representative direc-

tors will be nominated by local associations and elected at each annual meeting instead of being elected by local associations as they are now. It is also proposed to provide for twenty-one directors at large, elected at the annual meeting, instead of making the Executive Committee and honorary officers ex-officio members of the Board of Directors. These changes are made necessary by the proposed incorporation.

HEALTH BULLETIN ISSUED BY BROOKLINE BOARD OF HEALTH.

The March number is devoted largely to the health of the mind, the effect of tobacco and to obesity. The Board is to be congratulated on the sane and reasonable treatment given these subjects. Massachusetts is fortunate in having so many high-grade dissertations on public health matters which are being distributed by public agencies. In time, the people will know enough about the practical methods of conserving and promoting health that there will be evidence of greater progress. Knowledge will eventually lead to the elimination of the quack doctor.

RURAL TUBERCULOSIS CLINICS IN NEW HAMPSHIRE.

Nine of the ten counties in this State have been thoroughly organized with clinics and nursing service. The methods for creating a clinic are: first, appeals to selectmen and health officers. A place for the clinic secured, and the county nurse makes a survey of the mortality returns. Physicians are asked to give permission for visits to families in which deaths have occurred and the members of these families are asked to come to the clinic for examination. Whenever information is secured of persons suffering with cough or who are losing weight, all such are invited to attend the clinic. Druggists, school nurses, district nurses, and industrial nurses are asked to report suspicious cases. Addresses are made to operatives in factories and literature is distributed. During the past eighteen months, 378 clinics have been held and 7,289 persons examined. Two thousand, two hundred and seventy-eight cases of tuberculosis are now under medical care and nursing supervision.

SMALLPOX IN CONNECTICUT.

The epidemic of smallpox now active in Connecticut is more important than any outbreak in that State since 1917. Thus far, there have been 247 cases and the disease is not checked. In March, cases appeared in Bridgeport, Norwalk, Fairfield, Bethel, Milford, Danbury, Stratford, Monroe, Wallingford, and Westport. In every town the disease appeared first in unvaccinated persons. Only two fatalities have been reported thus far. Connecticut is more fortunate than Kansas, Colorado, Texas, Illinois and Oklahoma, for in these western states the disease was attended with a greater mortality. Oklahoma had 24 deaths among 38 cases in the county jail.

INSTRUCTIVE DISTRICT NURSING ASSOCIATION.

The excess of sickness which forced the work almost to epidemic pitch during January and February, continued well into March, dropping toward the end of the month almost to normal.

A total of 3,548 new patients was taken on, and 31,482 visits made.

Nine hundred and ten new cases of grip, pneumonia, tonsillitis and colds, about twice the number cared for during March of last year, show a marked drop from the 1,680 new cases in February. One hundred and thirty-seven new cases of measles were admitted. This is very many more than usual, and only one less than were admitted during the entire months of January and February together. On the other hand, there were fewer cases of mumps, chicken-pox, and whooping-cough. Typhoid fever still lingers, two new cases being taken on, as were eight of erysipelas and rather more of all the other diseases.

The number of new cases of diseases of the heart is monthly increasing. This is strikingly shown by comparing the number taken on this month (49) with the number (27) admitted in March, 1921.

Two thousand, six hundred and thirty-seven prenatal visits — about the average number — were made, despite the fact that the accumulation of very sick patients made the nursing work abnormally heavy. Five hundred and sixteen new prenatal patients, many more than customary, were admitted. Also the average number of visits to well babies were made.

RÉSUMÉ OF COMMUNICABLE DISEASES FOR MASSACHUSETTS, MARCH, 1922.

General Prevalence.

There were 10,202 cases of communicable diseases reported for this month as against 12,721 cases for February. This decrease was due entirely to the lessened incidence of influenza, as there were slightly increased incidences in sev-

eral of the more important communicable diseases.

Chicken-pox.—There were reported 510 cases of this disease for the month.

Diphtheria fell off slightly from 789 cases for February to 718 cases for this month.

Dog-bite, requiring antirabic treatment, was reported in 12 instances.

Encephalitis Lethargica increased from five cases for last month to 28 for this month. The total for March, 1921, was 43 cases.

Epidemic Cerebrospinal Meningitis was reported in 14 instances.

German Measles had its usual incidence with 54 cases.

Gonorrhea and Syphilis were reported in about the usual numbers, 409 cases and 188 cases, respectively.

Influenza decreased from 5,221 cases for February to 1,647 cases for this month. These cases, as during last month, were reported chiefly from eastern and central parts of the State.

Measles increased from 2,062 cases for last month to 2,657 cases for this month. This number is made up chiefly from reports from eastern and northeastern parts of the State.

Mumps.—There were 513 cases of mumps reported for the month.

Pneumonia, Lobar, with 988 cases, was reported in about the same number as last month.

Scarlet Fever increased slightly to 998 cases. The total for February was 950 cases.

Tuberculosis, Pulmonary. — There were 651 cases of pulmonary tuberculosis reported for the month. This is an increase of nearly 200 cases over last month's report.

Tuberculosis, other forms, was reported in 95 instances.

Typhoid Fever.—There were 32 cases for the month, all of which were scattered cases.

Whooping-cough increased slightly to 523 cases. Last month's total was 391 cases.

RARE DISEASES.

Anterior Poliomyelitis was reported from Chatham, 1; New Bedford, 2; Norwood, 1. Total, 4.

Anthrax was reported from Boston, 1.

Dog-bite, requiring antirabic treatment, was reported from Arlington, 1; Billerica, 1; Boston, 1; Cambridge, 1; Holyoke, 1; Ipswich, 2; Lowell, 1; Medford, 2; Newton, 1; Winthrop, 1. Total, 12.

Encephalitis Lethargica was reported from Boston, 2; Brockton, 1; Brookline, 2; Fall River, 1; Haverhill, 2; Holliston, 1; Ipswich, 1; Lawrence, 5; Methuen, 1; New Bedford, 1; Plymouth, 1; Salem, 1; Salisbury, 1; Waltham, 1; Webster, 1; West Boylston, 1; Worcester, 5. Total, 28.

Epidemic Cerebrospinal Meningitis was reported from Boston, 2; Cambridge, 1; Dudley, 1; Fall River, 3; Lowell, 1; Malden, 1; Melrose, 1; New Bedford, 1; Revere, 1; Southbridge, 1. Total, 13.

Malaria was reported from Boston, 6; Brockton, 1; Dartmouth, 1. Total, 8.

Pellagra was reported from Northampton, 1.

Septic Sore Throat was reported from Boston, 6; Brookline, 2; Cambridge, 1; Chicopee, 1; Easton, 1; Provincetown, 1; Shelburne, 1; Westford, 2. Total, 15.

Tetanus was reported from Pittsfield, 1.

Trachoma was reported from Boston, 4; Cambridge, 3; Chelsea, 1; Lawrence, 1; Lynn, 1. Total, 10.

EYESIGHT CONSERVATION.

In 1921, Mr. Herbert Hoover, then president of the Federated American Engineering Societies, appointed a committee to study the subject of Waste in Industry. Eyesight Conservation Bulletin 1 has been published and is being distributed. Frank B. Gilbreth states that the following influences cause a loss in productivity of 20 cents per worker for every working day: defective lighting, alternate sitting and standing, dark colored walls, types of chairs used and similar influences. This means a loss of $2,500,000,000 per annum for the entire working population. Although this estimate may be too large, a critical physical examination has revealed that more than 50 per cent. of the working people with defective vision require correction. Correction of visual defects should eliminate fatigue to a considerable degree. It is claimed that of the forty-two million men and women employed in this country, there are more than twenty-five million with defective vision which requires correction. It has also been found that correcting defective vision has resulted in increased efficiency, the value of which is far greater than the cost of such correction. In addition to the improved earning capacity of individuals, surveys of eye conditions will in the end save an appreciable number of people from blindness, thereby relieving the public of the burden of caring for blind persons who become unproductive in a great measure.

Investigations already made have aroused great public interest and brought about constructive action. Notices of this phase of physical conservation have been carried by over 900 daily papers and it has been estimated that at least 14,000,000 people have been reached.

Accidents to eyes are important because of accident insurance, in addition to the impairment of productivity. In the United States, approximately 15,000 persons are blind as a result of industrial accidents.

Of the permanently disabling accidents the eye was involved in 10.6 per cent. of all cases. Safety devices for the eyes have reduced accidents involving the eye from 75 per cent. in one plant to entire elimination in another. Both plants are engaged in operations which involve danger from flying metal chips. In addition to direct damage to the eye as a factor in industry, substandard vision, if uncorrected, may be important both in reducing efficiency and leading to other types of accidents.

The necessity for eyesight surveys is especially emphasized by those who have studied the workers in those industries where acuity of vision is essential. For example, in one manufacturing establishment it was found that 8.3 per cent. were wearing glasses which were satisfactory, but it was shown that 83.3 per cent. needed glasses, and only 8.4 per cent. were found to need no glasses. This indicates that the study of industrial workers is necessary, but also shows that many operatives had entered upon industry without having had proper attention in early life. It is very probable that examinations of children and the use of proper glasses early may tend to preserve eyes as well as create better workers later.

PENSION FOR WIDOW OF GENERAL GORGAS.

On March 24, 1922, the Senate passed the bill, which provides for a pension of $150 a month for Marie Doughty Gorgas, widow of Major-General William C. Gorgas. This action is in special recognition of the eminent services of General Gorgas in the eradication of yellow fever from Cuba and Panama.

TYPHOID FEVER IN MASSACHUSETTS.

This State stands with Wisconsin in being on the honor roll of lowest typhoid rate in the registration area. Only nine states show a higher mortality in 1920 than in 1919.

Massachusetts had 153 deaths in 1918, 105 in 1919, and 95 in 1920. Since the amount of typhoid fever in a community is regarded as an index of sanitary conditions, the citizens of this State should feel pleased with the health administration.

A LEAF FROM ANCIENT HISTORY.

Since no date appears, the chronology is left to conjecture.

Dear Sir:

A circular was recently sent to the members of the Massachusetts Medical Society, asking the following question: Do you favor the admission of women to the Society on the same terms with men?

To this circular eleven hundred and thirty-two replies have been received, of which seven hundred and nine were in the affirmative, and four hundred in the negative, while twenty-three were indifferent.

Bristol, S.	44	41	24	16	1

The replies by Districts were as follows:

	Total No. of Members.	No. of Ans.	Yes.	No.	Indif.
Barnstable	22	20	9	11	
Berkshire	47	38	24	13	1
Bristol, N.	30	26	18	8	
Essex, N.	65	59	40	19	
Essex, S.	81	72	45	26	1
Franklin	29	22	15	7	
Hampden	57	50	33	17	
Hampshire	42	40	24	14	2
Middlesex, E.	26	23	20	3	
Middlesex, N.	68	56	33	21	2
Norfolk	126	105	62	39	4
Middlesex, S	156	131	94	36	1
Plymouth	42	41	24	17	
Suffolk	357	269	151	112	6
Worcester	110	102	68	29	5
Worcester, N.	41	37	25	12	
Total	1343	1132	709	400	23

The membership of the Society, excluding non-residents and those temporarily out of the State, is thirteen hundred and forty-three.

It is therefore evident that a considerable majority of the Society, and seven to four of all who answered the circular, favor the admission of women.

Answers to the other questions on the circular show: first, that three hundred and thirty-six members have consulted with female-physicians, while six hundred and eighty-four have not (ten hundred and twenty replies); second, that nine hundred and thirty-one members do not object to consulting with a woman on account of her sex, while one hundred and forty-six do object (ten hundred and seventy-seven replies).

Respectfully,
S. Cabot, and Others.

MORTALITY FROM TYPHOID FEVER, 1920

The Department of Commerce, through the Bureau of the Census, announces lower mortality rates from typhoid fever in recent years. The amount of typhoid fever in a community is

recognized as one of the best indexes of its healthfulness. So, also, the mortality rate from this cause is a very important sanitary index.

The steadily decreasing mortality rate from typhoid fever is therefore most gratifying, a decrease in the registration states of 1916 from 13.3 per 100,000 population in 1916 to 7 in 1920. In 1920, of the states in the registration area, Massachusetts and Wisconsin share the honor of having the lowest rate (2.5), while the highest (22.4) appears for South Carolina. Of the eleven states showing rates by color, the lowest rate for the white population was 3.6, and the lowest for the colored was 4.6, both for New York State, while the highest rate for the white population was 19.1 for Kentucky, and that for the colored was 30.2 for the same state.

Of the 33 states shown for 1919 and 1920 in the table below, only nine show higher rates in 1920 than in 1919, namely:

STATE	1920	1919
Colorado	9.2	8.5
Connecticut	4.1	4.0
Kansas	8.0	7.3
Maine	9.0	5.7
Michigan	7.9	7.6
New Hampshire	6.8	3.4
New Jersey	3.3	3.2
Vermont	10.5	3.1
Washington	5.6	4.2

AMERICAN MEDICAL LIBERTY LEAGUE, 59 EAST VAN BUREN STREET, CHICAGO, ILL.

ENDORSED by the above name, a circular is being distributed under the title, "Philippines Pus Punchings." The opening sentence reads: "'Catch 'em young, treat 'em rough, tell 'em nothing,' has been pus punchery's slogan in the Philippine Islands." The assertion is made lower in the circular, that "in 1918 the Philippine Health Service shot 3,285,376 slugs of pus into that number of Filipinos and reaped a harvest of 47,369 cases of smallpox, with 16,447 deaths!"

Much the same kind of language is used in the rest of the circular.

The circular is sold at the rate of $6.00 per thousand. It also contains a challenge to The American Medical Association.

We trust that the A. M. A. will meet the challenge.

WHY BABIES DIE.

MORE than 100,000 of the 250,000 children less than one year old who die every year in the United States die from causes connected with their birth, says the U. S. Public Health Service. The need, it adds, for further study and investigation of these causes is urgent.

VITAMINES NOT A CURE-ALL.

THE present popular tendency to extol vitamines as a cure-all may be drawing to a close. The U. S. Public Health Service reports that efforts during the year to discover the unidentified food substance whose absence from the diet causes pellagra have excluded two of the three known vitamines. The search for the missing element is being steadily narrowed.

EACH DOLLAR BRINGS FIVE MORE.

THE U. S. Public Health Service reports that the expenditure of $50,000 for rural hygiene work on the coöperative plan in the last fiscal year led to the appropriation of five times as much by states and counties and of a good deal more by private individuals and corporations.

WHO'S EFFICIENT NOW?

UNCLE SAM may owe arsphenamine (salvarsan) to Germany, but he has improved it a lot since he took over its manufacture some years ago. Today, says the U. S. Public Health Service, it and its fellows pass tests that are twice as rigid, which means that the drugs themselves are twice as safe as they ever were before.

JUST ONE ITEM.

IN a report made recently to the Central Committee of the American Red Cross by Chairman Payne, the sum spent by the organization during the calendar year 1921 in aid of disabled veterans of the World War, and their families, was given as approximately $9,782,000.

Of this amount, $2,782,000 was expended by National Headquarters.

This latter sum, used in one year in behalf of disabled ex-service men and their families by National Headquarters, was greater than all proceeds accruing to Headquarters from membership fees in the Fifth Roll Call, held during the same calendar year.—*The Red Cross Courier*, March 4, 1922.

CHIROPRACTIC.

A STRONG effort is being made in the New York Legislature to legalize the chiropractic methods.

A committee of the New York State Medical Society has met to organize a plan for combating this menace to the medical practice act. If passed, practically every outlaw practitioner could carry on his work under the chiropractic law.

CANCER.

THE increasing rôle of cancer in life insurance mortality may be seen from the payment of $4,249,000 in 1921 as against $3,645,000 in 1920. These claim payments on account of cancer constituted 9.4 per cent. of the total in 1921 as against 8.0 per cent. in 1920. The growing volume of claim payments for cancer is of less importance, however, than the fact of an increasing cancer death rate, which only emphasizes the inability of present-day medical science to effect any material reduction in cancer mortality. — *Bulletin Metropolitan Life Insurance Company.*

CARE OF THE BABY.

THE "Care of the Baby," a new and enlarged edition of a former publication of the same name, is contained in the recent number of the weekly Public Health Reports of the United States Public Health Service and is now being reprinted for general distribution. Its eminently practical character is shown in the section on bathing the baby.

CURIOUS ERROR IN DIAGNOSIS.

ONE case of smallpox of mild type was recently treated for syphilis in New York. The danger of extension of the disease by reason of an erroneous diagnosis is obvious. The patient was given mercurial treatment. Smallpox is bad enough without having to submit to the treatment for another disease.

POST-ANAESTHETIC VOMITING.

VAL MACDONALD, L.R.C.P., of Melbourne, Australia, reports that the use of adrenalin has controlled vomiting following the use of ether. If his claim is substantiated, a boon will be conferred on a large class of sufferers. He advises five to eight minims of the 1 to 1000 solution of Adrenalin Chloride in one to one and a half drachms of water by mouth. The hypodermic use of the drug is not advised. The stomach should be empty before administration.

HERNIA IN INDUSTRIAL ACCIDENT CASES.

THE Supreme Court of Iowa has decided that a hernia developing in the ordinary work of an operation in the stockyards is not sufficient reason for indemnity under the Workmen's Compensation Act, although the first indication of the hernia came through a somewhat strenuous act.

THE MIDWIFE.

W. H. VOGT, M.D., of St. Louis, Mo., in an article published in the *Southern Medical Journal*, expresses himself about the midwife as follows: "One author recently showed by statistics that the mortality in Newark was smaller in cases attended by midwives than in those cared for by physicians. I have only to say that, so far as I know, the midwife has no mortality whatever. The reason is plain. When in trouble, she sends for the doctor and he signs the death certificate."

Boston has not had this experience. It is known that some cases have died under the care of midwives.

TYPHOID FEVER HELD COMPENSABLE UNDER WORKMEN'S COMPENSATION ACT.

THE Appellate Court of Indiana has decided that typhoid fever, contracted by an employee through drinking impure water furnished by the employer, is an "injury" by "accident arising out of and in the course of the employment" under the Workmen's Compensation Act, and as such is compensable.—*U. S. P. H. Reports.*

PUBLIC HEALTH CONFERENCE OF MASSACHUSETTS STATE FEDERATION OF WOMEN'S CLUBS.

THE tendency of the present time here in Massachusetts, especially, is to educate the people on matters pertaining to health. Recognizing the opportunities for the dissemination of information, the Women's Clubs are paying attention to public health measures. This is highly commendable, for in all probability women will be sent to the legislature in the near future, and they will exert influence in a larger measure, in proportion to information acquired. On March 29, 1922, The Massachusetts Federation of Women's Clubs held a Public Health Conference. Addresses were presented in the forenoon by Mrs. Sumner Coolidge, Dr. Donald B. Armstrong, Dr. Sumner Coolidge and Mr. Frederick Edwards. The problems of tuberculosis were especially discussed.

In the afternoon, Dr. Charles W. Eliot spoke on Animal Experimentation; Benjamin White, Ph.D., on Prevention of Disease through Vaccines and Antitoxins, and Col. Alfred F. Foote on the Prevention of Accidents.

PUBLIC HEALTH LECTURERS FOR THE YEAR 1922.

The Committee on Public Health of the Massachusetts Medical Society has been able during the past three years to arrange with well known specialists in various medical fields to give talks at meetings of the District Medical Societies on subjects of interest and importance to all practitioners. It is a pleasure to announce that a similar arrangement has been made this year and that the gentlemen named below are willing, without expense to the District Society, to give occasional talks of thirty to forty minutes on subjects relating to the promotion of public health, extending opportunity for questions and discussion. It is suggested that medical societies consider meeting at neighboring public institutions, since such meetings have been most successful in the past, particularly at the tuberculosis sanatoria and state hospitals for the insane.

José Penteado Bill, M.D., Doctor of Public Health. Specialty: Preventive Medicine.

Frank C. Dunbar, M.D., Bacteriologist, Instructor in Bacteriology and Pathology, Tufts College Medical School.

Walter E. Fernald, M.D., Superintendent, Massachusetts School for the Feeble-minded.

Timothy Leary, M.D., Professor of Pathology, Tufts College Medical School; Medical Examiner, Suffolk County.

Edwin H. Place, M.D., Physician-in-Chief, South Department, Boston City Hospital. Specialty: Contagious Diseases.

C. Morton Smith, M.D., Chief of Department of Syphilis, Massachusetts General Hospital.

George Gilbert Smith, M.D., Assistant in Department of Genito-Urinary Diseases, Massachusetts General Hospital. Specialty: Genito-Urinary Diseases.

Lesley H. Spooner, M.D., on Staff of Out-Patient Department, Massachusetts General Hospital, Specialty: Specific Diagnosis and Treatment of Pneumonia.

William C. Woodward, M.D., Health Commissioner, City of Boston.

George H. Wright, D.M.D., Lecturer on Dental Hygiene, Harvard Dental School. Specialty: Dental Surgery.

Thomas F. Kenney, M.D., Director of School Hygiene, City of Worcester. Specialty: Full time School Health Officer.

Secretaries of District Medical Societies writing to ask for these lecturers will kindly designate the topic, the place and the hour of meeting as well as the name of the desired speaker, thus eliminating unnecessary correspondence. Please address communications to the Secretary of the Committee, Annie Lee Hamilton, M.D., 164 Longwood Ave., Boston 17.

[Note: The Committee on Public Health feels that this notice may have escaped attention, for few applications have been received. Each lecturer is an authority and would present his subject in an interesting and instructive manner.]

EIGHTH ANNUAL CONFERENCE, MASSACHUSETTS TUBERCULOSIS LEAGUE.

These meetings cover three days, beginning April 20, 1922. The Board of Directors will meet in the Hotel Victoria at 3 P. M. On Friday the meeting will be in Huntington Hall at 10.30 A. M. After the President's address and the reports of the Secretary and Educational Secretary, there will be addresses by Dr. Sumner H. Remich, Director of the State Division of Tuberculosis, and Dr. Charles J. Hatfield, Director of the National Tuberculosis Association.

In the afternoon, beginning at 2 o'clock, there will be addresses on "Preventoria," by Dr. I. Ogden Woodruff, N. Y., and "Summer Camps," by Dr. Parker M. Cort, of Springfield. These papers will be discussed by Dr. John B. Hawes, Dr. Walter Griffin, and by several members of the Legislature. At 4.30 there will be a question-box discussion.

On Saturday, beginning at 10 A. M., Huntington Hall, the School Health Program for Delicate Children will be discussed by Dr. Wm. T. Devine, Dr. Thomas Kenny, Miss Greta Mabry, Miss Alziba Sandwall, and Miss Lucy Queale. At 1 P. M. the Seal Sale Luncheon and Conference will be at the Hotel Victoria.

THE DEPARTMENT OF PUBLIC HEALTH

REPORTED WEEK ENDING APRIL 10, 1922.

Disease	*No. of Cases*	*Disease*	*No. of Cases*
Chicken-pox	91	Pellagra	1
Diphtheria	145	Pneumonia, lobar	142
Dog-bite	3	Scarlet Fever	174
Encephalitis lethargica	9	Syphilis	38
Epidemic cerebro-spinal meningitis	4	Suppurative conjunctivitis	13
German measles	18	Trachoma	2
Gonorrhea	77	Trichinosis	1
Influenza	38	Tuberculosis, pulmonary	146
Measles	678	Tuberculosis, other forms	19
Mumps	103	Typhoid	5
Ophthalmia neonatorum	21	Whooping-cough	57

NOTICES.

MASSACHUSETTS GENERAL HOSPITAL.—Staff Clinical Meeting, lower Out-Patient Amphitheatre, Monday, 8.15 P. M., April 24, 1922. An account of the recent Physiological Expedition to Peru, illustrated with lantern slides. Doctors, nurses and medical students invited. Dr. Arlie V. Bock.

MASSACHUSETTS GENERAL HOSPITAL.—A Clinical Meeting of the Out-Patient Staff will be held in the Lower Out-Patient Amphitheatre at 12 Noon, April 26th. Programme: "Cervical Cord Tumor," Dr. George Clymer; "Post-Encephalitic Paralysis Agitans," Dr. E. W. Taylor; "Brachial Plexus Injury," Dr. Henry Viets; "Myasthenia Gravis," Dr. Hugo Mella; "Electromyographic Studies of Paralysis Agitans," Dr. Stanley Cobb; "Combined Cistern and Lumbar Puncture," Dr. J. B. Ayer. Doctors, nurses, and medical students invited.

RESIGNATION OF DR. ARTHUR V. GOSS.—The daily papers have reported that Dr. Arthur V. Goss has tendered his resignation as superintendent of the State Hospital at Taunton after a service of twenty-eight years.

DR. ROYAL P. WATKINS NOMINATED.—The Governor has nominated Dr. Royal P. Watkins of Worcester for the position of member of the Board of Registration in Medicine made vacant by the resignation of Dr. Fallon.

BOOKS RECEIVED FOR REVIEW.

The JOURNAL acknowledges the receipt of the following books for review:

Opiate Addiction—Its Handling and Treatment. By Edward Huntington Williams. Published by The Macmillan Co., New York. 194 pages. Price $1.75.

The Physiology of Gout, Rheumatism and Arthritis. By Percy Wilde. Published by Wm. Wood & Co., New York. 229 pages. Price $3.50.

Internal Secretion and the Ductless Glands. By Swale Vincent. Published by Longmans, Green & Co., N. Y., and Edward Arnold & Co., London. 422 pages. Price $8.50.

THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The American Medical Association is a scientific organization but is composed of members with more than the average amount of "humanity" in their makeup, with social elements too long repressed. These members are weary from bearing the responsibility of many human lives. Instead of having play time they have become public teachers with no recess. The local entertainment committee of the A. M. A. have been busy preparing to show these visitors true St. Louis hospitality and to provide for them such diversions as will be both restful and entertaining.

The golfers will arrive early in order to participate in the annual tournament on Monday, May 22nd.

Tuesday evening, the opening meeting will be held in the Odean and arrangements are being made to have the music and addresses transmitted by radio to various parts of the city and to distant cities.

Wednesday evening is given over to banquets, such as alumni, fraternal, sectional, etc. On this evening provision is being made to entertain the visiting ladies and those doctors who are not engaged at the alumni and fraternity dinners at one of St. Louis' noted moving picture shows with special musical and other features for the occasion.

On Thursday afternoon the Medical Department of Washington University is giving a special tea on the grounds of the institution. Thursday evening will be given over entirely to the President's reception, and it is hoped that as many as possible of the doctors and their ladies will grace the occasion with their presence.

The Committee, after visiting the offices of the Mayor and the Director of Public Welfare and being assured of their coöperation, have decided to reserve until Friday evening the chief feature of their entertainment by giving a special program for the entire association in the unique open-air Municipal Opera, which has a comfortable seating capacity of ten thousand. The location of the opera in the heart of Forest Park, with its special lighting effect made possible by the natural foliage of the forest, can be appreciated only by those who visit it at night. It is the hope of the committee that every visitor at the convention will remain in St. Louis through Friday evening.

The Ladies' Entertainment Committee, under the leadership of Mrs. Willard Bartlett, has arranged to take immediate charge of every lady visitor who may be persuaded to accompany the medical member of the family to the convention. They need have no fear of being left alone while the doctor is attending the scientific meeting, for practically every hour of their time has been arranged for and it is hoped that many more ladies than usual will visit the "City of Homes"—"The Friendly City."

A special visit to Missouri Botanical Gardens is being arranged and will be an important item in the entertainment program. Among other features to be shown will be an old Italian Herb Garden. St. Louis is justly proud of its world-famous Botanical Garden.

Take the whole week off, Doctor, and spend it in St. Louis. It will be time well spent. You may lose a patient, some may get well during your absence, but your increased vigor when you get back will abundantly make up for any losses. Come to our party for one full week.

Dr. C. E. Burford, 3525 Pine Street, is chairman of the Entertainment Committee.

MOST EYES DEFECTIVE.

Survey of School Children and Adults Shows Alarming Condition.

Statistics covering many years show that nine out of every ten persons over 21 usually have imperfect sight. At 31, the proportion is larger. Above 40, it is almost impossible to find a man or woman with perfect sight. For the last 100 years the profession has wrestled in vain with the problem, finding no means compatible with the conditions of modern life for preventing errors of refraction, and no means of relieving them except by glasses.

It was learned some years ago by the examination of several thousand school children in one of our large cities, that 66% of them had defective vision of such a degree as to warrant the wearing of glasses.

DON'T USE DOPE.

The Chicago School of Sanitary Instruction, in its bulletin, referring to morphine or opium in some form, states that:

"There is excellent medical authority for asserting that to give these drugs indiscriminately to persons suffering from colds or influenza is to invite an attack of pneumonia. The right thing to do in all such cases is to go to bed, or at least remain indoors, call the family doctor and be guided by his advice and treatment. In other words, don't experiment with yourself and try to practise medicine.

"And finally, don't forget that dope is dangerous. Don't use it."

Censors' Meeting.—The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library, No. 8 The Fenway, Thursday, May 4, 1922, at 4 o'clock. Candidates should make personal application to the Secretary, and present their medical diploma at least one week before the examination. Richard H. Miller, Secretary, 402 Marlborough St., Boston.

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